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PHOTO- LITHOGRAPHER

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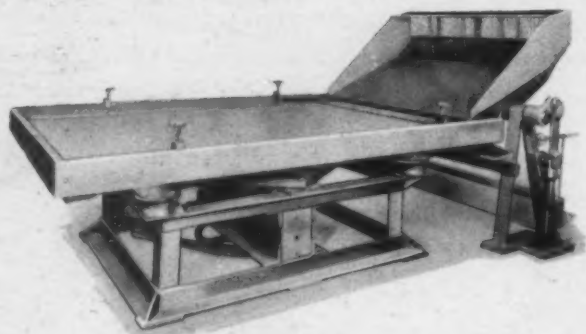
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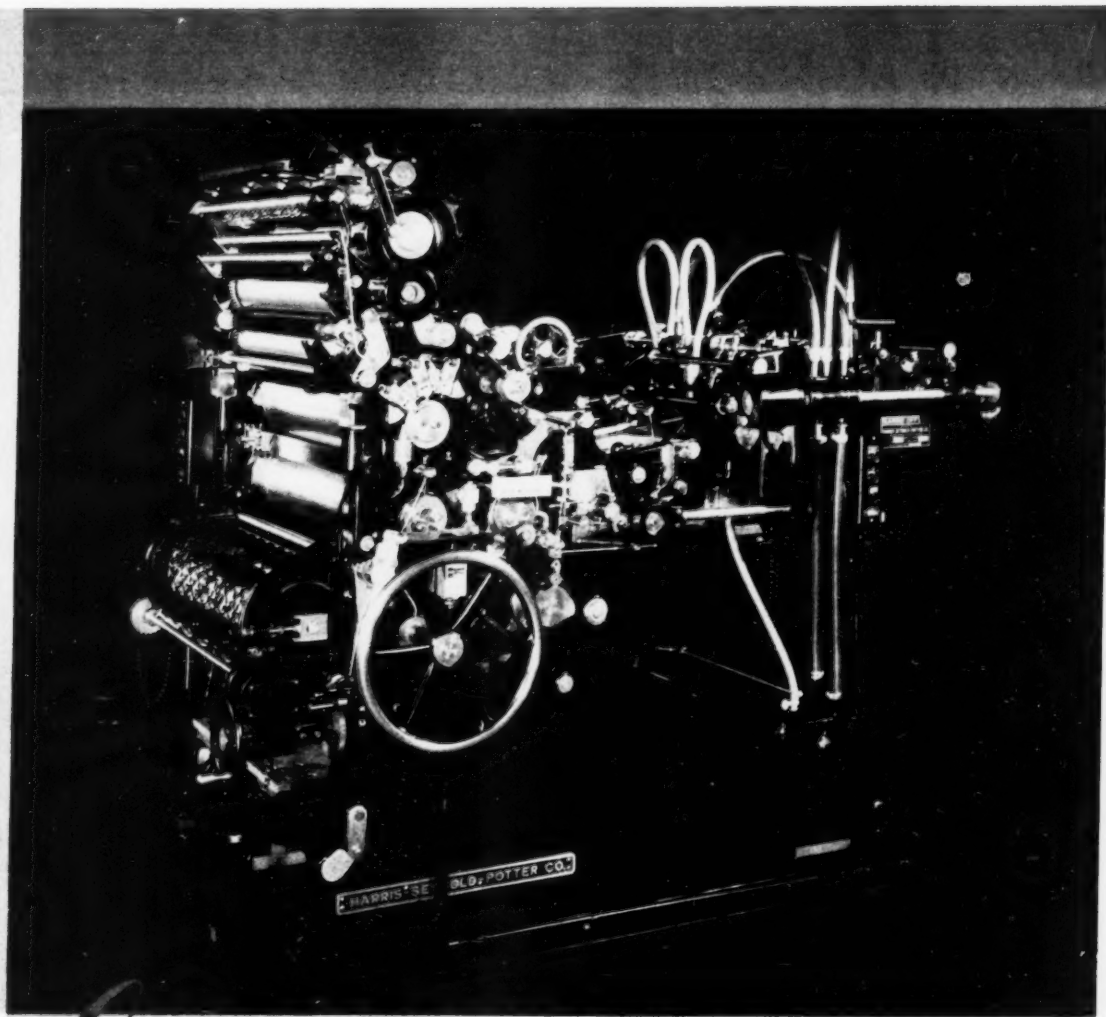
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THE PHOTO-LITHOGRAPHER

A LITHOGRAPHED MONTHLY FOR LITHOGRAPHERS

VOLUME 4 APRIL, 1936 NUMBER 4

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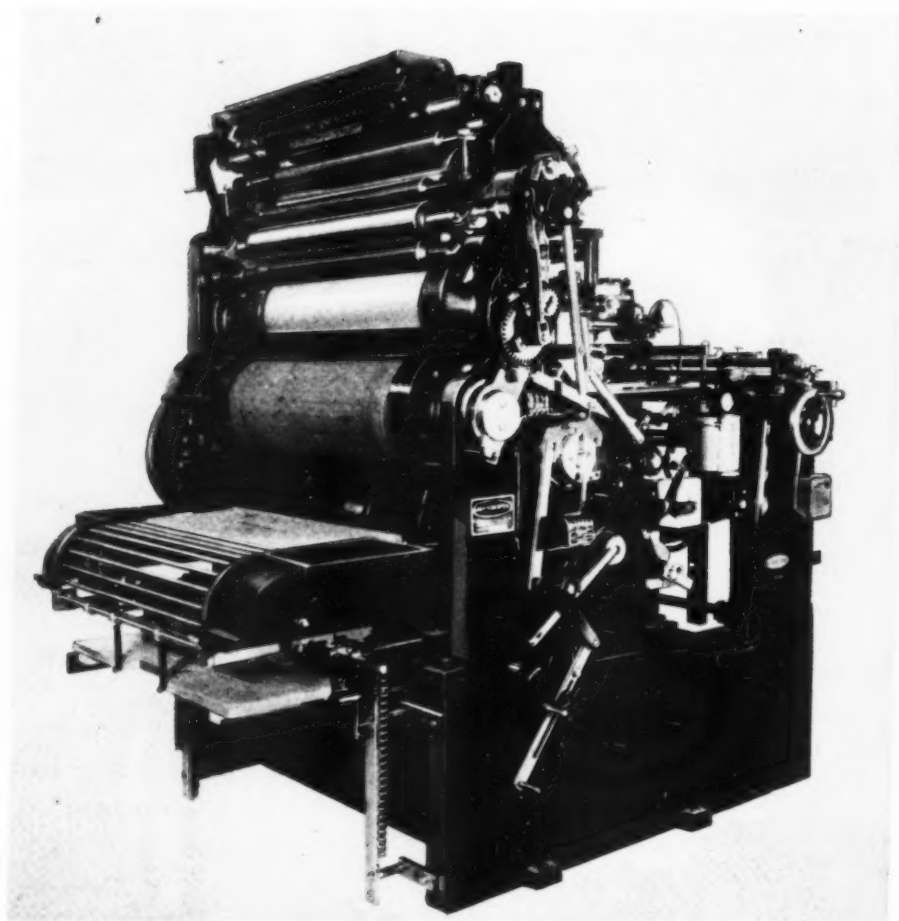
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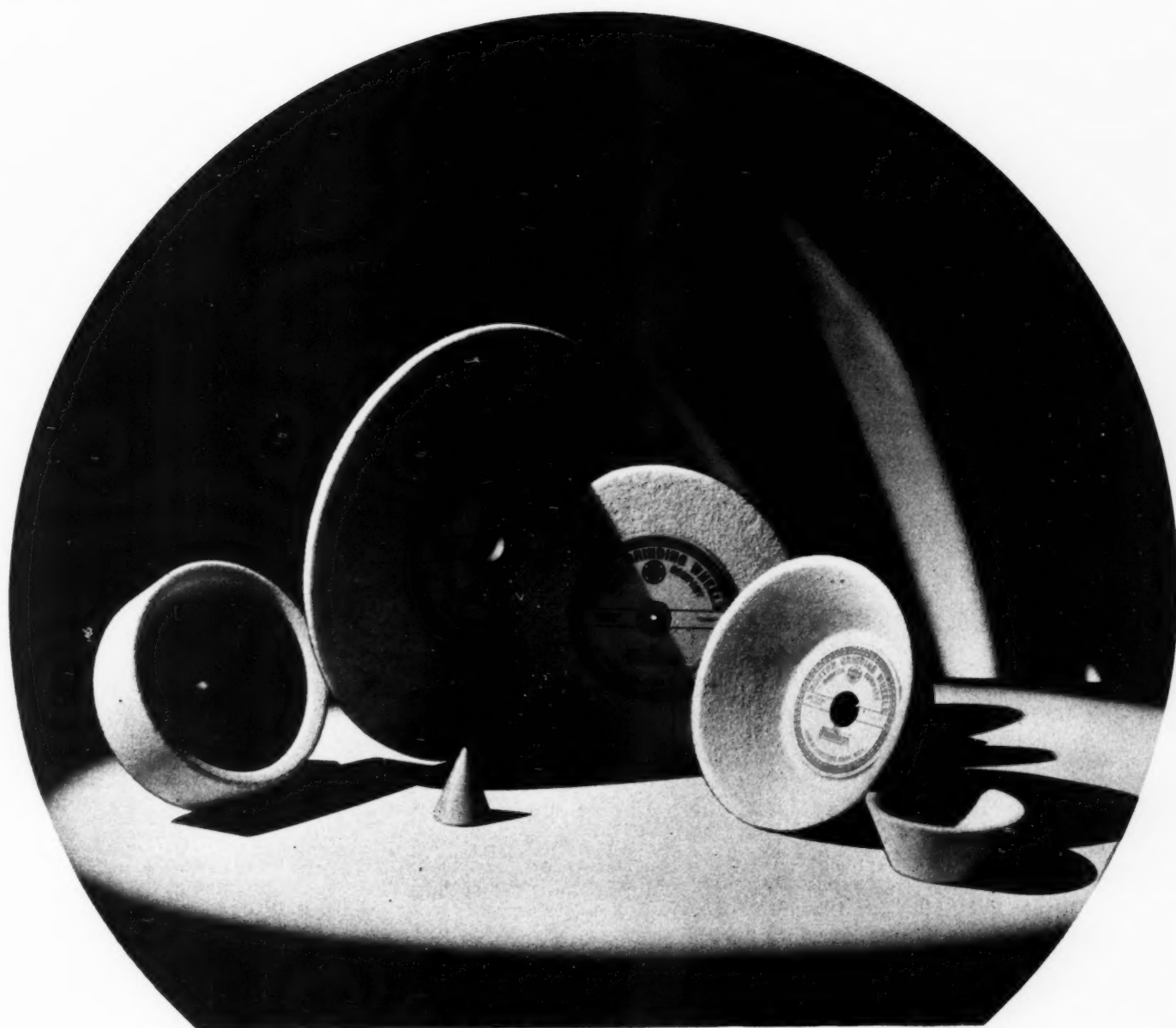


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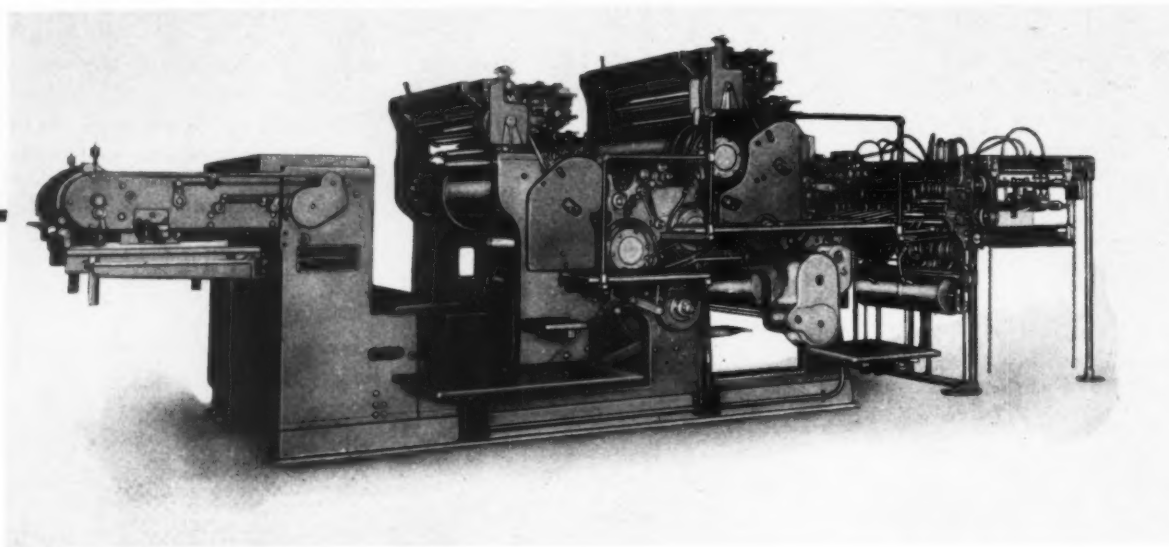
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The PHOTO-LITHOGRAPHER

PUBLISHED IN THE INTERESTS OF LITHOGRAPHERS TO INCREASE SALES EFFICIENCY AND QUALITY

VOLUME 4

APRIL, 1936

NUMBER 4

Report to the Board of Directors

BY PAUL A. HEIDEKE

President, National Association of Photo-Lithographers

IT has been about seven months since we have had the opportunity to sit down together for the purpose of taking stock, so to speak, of our Association. The uneasiness and confusion at this time, I believe, is almost as great as during the period of chaos when all banks were closed in 1933. There is no doubt that business has improved, but with the two political parties now in full swing, taxes, and more taxes, of every variety now on our doorsteps, with more to come, with still ten to twelve million people out of employment, and with profits, even after improved business conditions, at a very low ebb, it is no wonder that humans are uneasy, dissatisfied and concerned about the future. To add to the muddle of things our National deficit is growing by leaps and bounds with no end in sight. All of Europe is in a turmoil with threats of war.

We might feel that these things should not worry us, but be that as it may, it does affect all of us in no uncertain manner.

In our industry as all of you know, there is, in spite of our efforts, a considerable amount of unrest due to the lack of stabilization in various localities.

Problem of Stabilization

There is no short way to real stabilization, but there is one definite road to improve it and that is through better organization of the industry itself, local and national, in order that we may learn from one another and through the setting up of cost schedules and production standards which do furnish an experienced guide for stabilization efforts. We must maintain an organization in our industry that will, and does continually disseminate helpful and factual information, and is ever prepared to be helpful in every detail.

Along with the confusion and unrest there naturally results a complaining mind with considerable anger, mostly conceived through hearsay and not always based on known facts. This results in fomenting further anger and retaliation methods and then the damage becomes alarming and wide spread.

It might not be amiss at this juncture to remind ourselves of our duty accepted by us when we were elected by the members of our Association. Our duties conferred upon us

by accepting our position as directors are very definite, in that we subscribed to carrying out, insofar as humanly possible, the aims and purposes for which the Association obtains its right to exist.

Three Prime Objectives

Among the several objectives there are three, which are, I believe, the easiest to read, but which, it seems are the most difficult to make effective. Let's take them in this order.

"To promote the general welfare of the Industry."

That is easy to read and not difficult to understand. Here is another.

"To encourage the spirit of good will and mutual confidence between members, the industry and the general public."

That one is not so difficult to understand, but so unreasonably hard to individualize.

"To foster a high standard of dealing between members, the trade and the general public."

This one would be easy to maintain if the one just ahead of this one could be lived up to.

Possibly they are idealistic, but only so because we place our personal greed, lack of understanding, and unwillingness to do unto others as we would have them do unto us, above all other considerations.

These three objectives are so very often treated with scorn in that they are declared to be mere language and cannot hope to be treated seriously. The very foundation of progress and accomplishment with competition within industries is measured by the degree of respect with which the members of that industry hold these three objectives.

Value of Membership

When these three objectives are held in high regard by members of the industry, stabilization and all other efforts for betterment are much easier and more certain of accomplishment.

We hear the question every now and then "What good is it to me to belong to the Association, if you can't make so and so do this or that." Certainly you would not con-

demn your church as an institution just because you felt that some unworthy soul was attending services. It is difficult to understand why a member will condemn the Association and all of its objectives just because some one or more fellow members stand accused of violating some of the prescribed rules of good conduct.

Do we lack the faith and courage to promote the objectives that we so thoroughly believe in and know to be right? Do we deliberately and thoughtlessly condemn the whole Association and its work and objectives, because we have no faith in ourselves?

Do we fail to make every effort with courage and faith in our objectives to alleviate or right a violation, or do we just blow up and bust, rather than make the effort?

Association's Value

It seems that this is more of a sermon than a report, but it occurred to me, if I might be pardoned for the comparison, that successful association activities are somewhat akin to religious activities, in that there must be faith, courage and forgiveness in the hearts of those who participate, in order to obtain the desired objectives.

Taking the hardboiled, cold, calculating point of view still the measurement tells that you cannot hope to better yourself without benefiting someone else, and it is a well known fact that the benefit does not always reach the hands that you would have them reach.

If you were forced to protect your interest by physical combat, then would it not be of some comfort to you to know that it would not be necessary for you to fight a crowd of competitors but through your Association efforts you had reduced your enemies to an individual or two.

You will gain nothing in satisfaction or money by condemning the earth, because the weather don't suit you. Cooperation and willingness to make a sincere effort to cure or alleviate the ills of our industry will certainly do more for you than simply condemning them.

In the matter of stabilization in which we are all most vitally concerned, your Association in cooperation with local organizations has found, I believe, a method by which at least a considerable amount of our desire can be obtained.

Inasmuch as this is a very recent effort we are not in position to make any definite statements as to what will be accomplished by those who may choose to avail themselves of this method.

Membership on Upgrade

Our membership has increased very satisfactorily. Our membership now covers practically every state in the East, North and South. No special effort has been made to increase our membership; however, we have added many new members. It is anticipated that a special effort will be made in the next month or two to increase our membership in all localities.

By yielding to economies on every hand we find our treasury in good shape, with no bills of any consequence to be paid. Your Treasurer has prepared a detail report.

The several educational courses have been of immense value to our membership. We have just begun this phase of our activities, and with your help we will make every attempt to enlarge this work from time to time to make it even more effective.

The one effort which I am sure the entire industry is justly proud, members and non-members alike, is the association magazine **THE PHOTO-LITHOGRAPHER**. From its humble beginning as a two page leaflet it has grown to a recognized trade publication which is worth its weight in gold to every subscriber. The many letters of commendation are sufficient proof that **THE PHOTO-LITHOGRAPHER** will continue to grow in popularity. We would certainly fail in our duty and just appreciation if we should overlook to extend our thanks and gratitude for the very effective work performed by our Executive Secretary. He has had a difficult and arduous task, and without complaint he has cheerfully and efficiently given of his energies without thought of personal gain.

His batting average is 1000 with no slump in sight. It is also our duty to recognize the efforts of our General Counsel who has been called on frequently for legal interpretations and advice. Captain Monfort has been generous to an almost unheard of degree with his time and efforts in our behalf. We are greatly indebted to him for his fine spirit of cooperation and for the invaluable services performed.

To all members of our Board I want to extend my personal gratitude for their cooperation.

Permit me to conclude this report by quoting this truthful thought:

"The man who trusts men will make fewer mistakes than he who distrusts them."

National Convention in Atlantic City

THE annual convention of the photo-lithographic industry will be held in Atlantic City, on September 18, 19 and 20, it was voted at the recent board of directors meeting of the National Association of Photo-Lithographers. Announcement of the hotel chosen for the meeting will be made soon.

An imposing program is being arranged for the three-day session which will cover such important elements as costs, production standards, a sales promotion campaign for the industry and the expansion of educational work already under way.

Because of the fine weather Atlantic City enjoys during September, many members of the industry have indicated a desire to bring their families and make the convention week-end a real holiday.

COLOR

BOOSTS SALES

FACTORS TO BE CONSIDERED IN DECIDING WHETHER TO PRODUCE A JOB IN ONE COLOR, TWO COLORS, THREE OR MORE COLORS

"WHAT advantage would one advertiser have over another if every advertisement in a publication were printed in color?" This seemed to be a brain-twister which twitched the intellect of a skeptic, somewhat startled several years ago when color suddenly revolutionized the form and content of advertising. The skeptical philosopher, however, did not yet learn that one of the best teachers for the contemporary problem is the history of the past. Had he gone one step further and queried, "What advantage *did* one advertiser have over another when every advertisement in a publication *was* printed in black and white?" he would have discovered a tool with which to tackle the problem of color in advertising. The problem suddenly expands and we begin wondering." What advantage did one advertiser have over another when there was only one type, one printing machine, one paper, etc.?"

In retrospect, we observe the various progressive steps through which advertising passed from a relatively crude form of print with the intent to deceive and defraud to the increasingly refined art and science of colored reproduction with the intent to accurately portray goods. The form that an advertisement followed at any particular time was largely determined by the state of the printing arts and the mind of the people for whom this printed matter was intended. Just as the pressure of injured public opinion finally established legislation to repress fraudulent advertising so does the eagerly sought smile of public opinion beam approval upon the increasing trend to color in advertising.

A Matter of Contrast

To return to the problem that troubled our skeptic: The answer to the puzzle—What advantage would one advertiser have over another if every advertisement in a publication were printed in color—is simply, *none whatsoever*. When color was first introduced into advertising it met with dramatic success. Those early pioneers who had both the courage and foresight to launch out upon this new technique reaped a very bountiful harvest. And they continued to realize fantastic profits just so long as their competitors remained ignorant of the strength of color. But as soon as color won universal acceptance and recognition, the advantages of novelty and monopoly enjoyed by those few early

color advertisers expired. It is no longer so much a question of color as such, but rather *how* shall I use color and *where* shall I use it? The problem of absolute advantage of color has long passed. Just as the question of the advantage of the early printed advertisement over the peddler who went about knocking on doors and advertising his goods has passed. It is generally conceded that the use of color in advertising has come to stay. And the only advantage that one advertiser has over another is *how effectively* he makes use of his color and how *impressively* he produces it on the printed page.

Thousands of Reasons Why

As there are thousands of different commodities so there are thousands of different reasons why color is used in advertising. But these various applications of color boil down to a few fundamental facts which explain the use of color in advertising. The Association of National Advertisers completed a two year survey, "Color in Magazine Advertising", under the direction of Edward Strassman, secretary of the committee. The report pointed out that of 28 advertisers who spent one million and over during 1930, 19 reported that out of their total \$38,986,023 in national magazines, \$24,666,340, or 63 1/2% was for color. Mail order houses found that color pages pulled 6 to 1 better than black and white. And one of the most interesting results of the study are the various reasons given by advertisers for the use of color:

- 32 used it because there are color values in the product.
- 28 used it because of added attention.
- 15 used it for its innate appeal.
- 15 used it because it helps throw an unusual atmosphere about the product.

Thus based on this very extensive study made by the A.N.A. there are four fundamental reasons for the use of color listed according to its relative value:

- 1) Color values in the product itself.
- 2) Attention value.
- 3) Innate appeal.
- 4) Atmosphere.

If we examine these categories we find many current advertising campaigns which will bear out the conclusions obtained

by the A.N.A. report. Realizing that the only just treatment of colorful merchandise was to use colorful printing, Marshall Field & Company produced 60,000 copies of their style booklet in the "Esquire Manner". It was appropriate to the color in men's clothing. These 16 page booklets were sent out to their male charge accounts. The result was highly gratifying. A black and white picture would have been the most ineffective manner in which to try to sell the new cheerful clothing for men.

A statement made by H. E. Waldron, vice-president and general sales manager of the Sheaffer Pen Co., further illustrates the advantage of stressing the color values in the product which is offered for sale. "Because our product was colorful and because by actual test it has been proved that color draws more than three times as much attention as black and white" the Sheaffer Pen Co., has leaned very heavily upon color to sell their pens. Mr. Waldron pointed out that in a case filled with fountain pens, the Sheaffer Pen was distinguished and remembered for its color. This company pioneered in the use of color in newspapers and is today the largest user of color advertising in newspapers.

Stimulated Flower Ads

The use of color in the advertising of flowers is reported to have increased the sales of one concern by more than 200%. Since flowers have but two appeals, namely, beauty of coloring and fragrance of scent and since flowers are sold primarily for their beautiful coloring rather than for their scent the importance which a faithful color reproduction cannot possibly be overestimated.

All commodities, however, are not so fortunate as to enjoy the benefits of color in like degree. And this brings us to the second reason for the use of color as given by the A.N.A. report—added attraction value. One of the four points included in Westinghouse's 1935 plans for refrigerator national advertising was the use of full color for attention, according to Roger Bolin of the merchandising Advertising Department, Westinghouse Electric and Manufacturing Co. "We took advantage of a survey made by an independent agency", writes Mr. Bolin. Representatives called on a number of people with a copy of the magazine in which each advertisement had the name of the product obliterated. Persons were asked to identify products and whether or not they gave much attention to the copy and illustrations. From this survey a grade was set upon the attention value of each advertisement. For example, if 600 of 1,000 people interviewed remembered seeing a certain ad, the attention value of that advertisement would be graded 60%. "The result of the entire survey proved that four-color advertising had a much greater attention value, and the additional cost was more than justified by the additional results." The percentage of increase in Attention Value of Full Color over black and white the report holds is 36%. "As a result of this survey", Mr. Bolin concluded, "we embarked on a full color program and from the early

reactions to our ads among distributors and dealers, we feel that the policy is sound."

The third and fourth categories of color in the A.N.A. report, innate appeal and atmosphere, are closely related. Both seem to be grounded in instinct. It would appear that atmosphere results from an imaginative use of the innate appeal which color makes upon the mind, especially when it is associated with something familiar to the observer. The innate appeal of color is readily discerned in children. The "Quaker Girl Color Book" prepared by Armstrong Cork for their current advertising promotion campaign is an example of this type of appeal.

Automobile manufacturers are keenly aware of the sales value in using color to create atmosphere and distinction. Fisher Body has attained beautiful color effects in both roto-gravure and in magazine. The aim has been to inject an atmosphere of refinement and class. This was realized by the use of rich color tones and the setting of the pictures. W. S. McLean, Fisher's director of advertising has explained his use of color for the "strong eye-arresting value of color. Consequently, we are assured that our advertising will be seen and read. We are using color advertising almost exclusively . . . the subject used in Fisher Body advertisements always demand color and harmony of line, and an opportunity to further emphasize these associations is readily accepted by us."

Yardly & Co., Ltd., is another large advertiser that employs color to appeal to the sense of refinement, exclusiveness, elegance, and royalty.

By submitting specific examples of the use of color by several national advertisers, we have substantiated the conclusions made in the A.N.A. report. What other applications of color do large advertisers make?

Lends Individuality

Mr. Peters, buyer of printing and lithography for Schenley Distilleries, Inc., holds that color has assumed a position approximating a *sine quo non* in the Schenley advertising policy. "The most significant value that lies in color", Mr. Peters informed the writer, "is the distinction and individual personality that the judicious use of color stamps upon our advertising. Whether the medium be magazine, poster, broadsides, or direct mail, color imposes upon the printed paper an air of distinctiveness. Color, consequently holds the supreme virtue of providing our products with an air and personality peculiarly our own." Mr. Peters then displayed an extremely effective colored poster advertising two quality wines distributed by Schenley. "Now, how do you think this would have been put across if done in black and white?" he queried. "Black and white would have carried neither the effect nor the conviction of two distinctive and stimulating wines." It was quite obvious that black and white could never have distinguished between the strong red wine bottled in a dark

(Continued on Page 42)

Soliciting Resort Business

**Timeliness and Extent of This Rich Market
Recommends It to Alert Lithographers as a
Fertile Field for Prospective Offset Jobs**

WITH the passing of Easter and the arrival of balmy weather, there suddenly springs to life in all parts of the country a great industry which has, for the most part, has been hibernating for a good many months. That industry is the resort business and its immediate reason for springing back to life is the urgent necessity for formulating plans for the busy days ahead.

The resort field, comprising hotels, communities, summer camps, health retreats, is one of the nation's great industries. Countless millions every year indulge in the luxury of a

change from the steady grind of daily routine. Whether it be for week-ends or for extended period, at the seashore, or in the mountains, hardly a person exists who is not the target of entreaties to come to this place or that and enjoy the stimulus of relaxation.

Because of the almost universal appeal of the resort the persons engaged in the industry are faced with the vital necessity of directing attention to their own facilities, if they are to reap the rich profits that the season ahead promises. Thus, resort owners constitute a first-class market for alert lithographers who possess a knowledge of what resorts have to sell, how they sell it and how lithography can help them stimulate their sales.

It is the purpose of this discussion to review briefly the nature of that intangible blessing, "relaxation", which is the resort operator's chief stock in trade, and to indicate how judicious use of the lithographic process can aid in achieving the sales results desired.

Appeal Is Universal

Practically all successful resort or travel literature is built around the universal desire of people to escape from their everyday environment, to experience new surroundings, to meet new faces, to be relieved of the tediousness of regular routine. The successful exploitation of this keynote is always the earmark of the vacation booklet that packs a punch. Thus, it appears evident that any literature which the lithographer might suggest to a prospect should be based on this important theme.

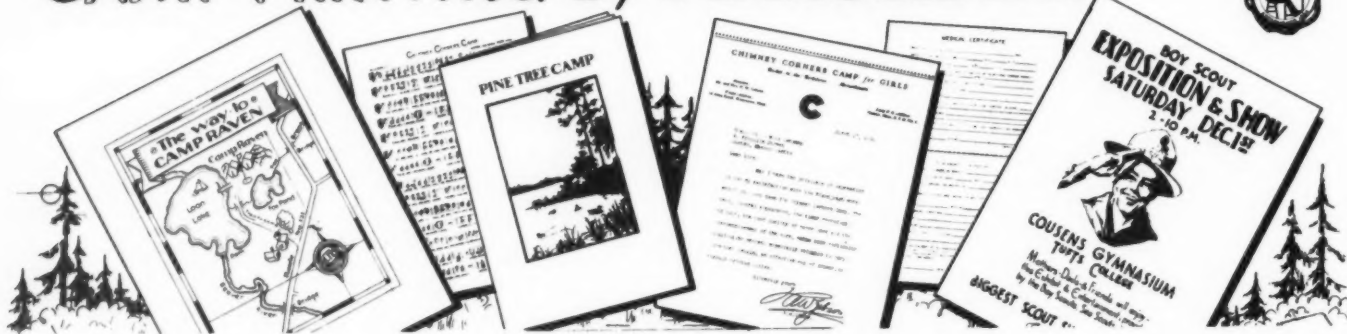
Following the universal appeal, resorts' promotional material attempts to tie up the specific facilities at hand with the prime objective of the vacation seeker. Attractive location, comfortable hospitality, congenial surroundings, sociable fellow vacationers—these are vital links in the resort's sales story. Exclusive features offered by one establishment are to be exploited to their fullest degree—and frequently economy is one of the factors to be emphasized.

One important reason why lithography is more and more frequently being given the call to produce resort literature, is the desirability of utilizing large halftone areas to picture the sales story as much as possible. Prospective guests want a "preview" of the spot to which they intend to repair for a much needed vacation—and resort operators are anxious to show their facilities to good advantage.

A special promotional campaign launched by the Spaulding-Moss Company, Boston lithographic establishment, stressed the resort owner's opportunity to use a maximum of illustration at a minimum cost. This firm circulated a broadside



CAMP PRINTING by PLANOGRAPH



which contained suggestions for summer camp promotional material and miscellaneous literature. The sales message was planographed on a specially designed letterhead, dominated by an outdoor theme. Several typical broadsides, maps and announcements were reproduced.

Many hotels are now or will soon be in the market for promotional material directed to organizations which are planning seasonal meetings. Such lithographed or printed material as these hotels require usually strike a double keynote—the usual vacation appeal plus the particular facilities offered by the hotel or community for handling large groups.

Chambers of Commerce have been participating in the concentrated endeavor of resort promoters to attract the attendance of trade associations, fraternal orders and other groups that turn out en masse for a seasonal convention. The expenditures of such organizations come to a huge amount each year and it is no wonder that all who are likely to benefit are willing to appropriate funds to attract the visitors' business that is so profitable.

Carefully planned sales campaigns directed to the units that comprise the resort industry have brought worthwhile profits to many lithographic establishments. The initial step in such a direction, should be the compilation of a comprehensive file of specimens used by different hostelrys, resorts, institutions and communities in stimulating the interest of prospective visitors.

What One Hotel Did

One of the most impressive hotel presentations issued recently, and one that is worth the careful attention of every lithographer interested in selling this market, is the brochure circulated by the Netherland Plaza Hotel, Cincinnati, one of the progressive establishments directed by National Hotel Management, Inc. The latter, incidentally has been a good sized user of lithography not only for the Netherland Plaza but for the other well known hotels comprising the chain as well.

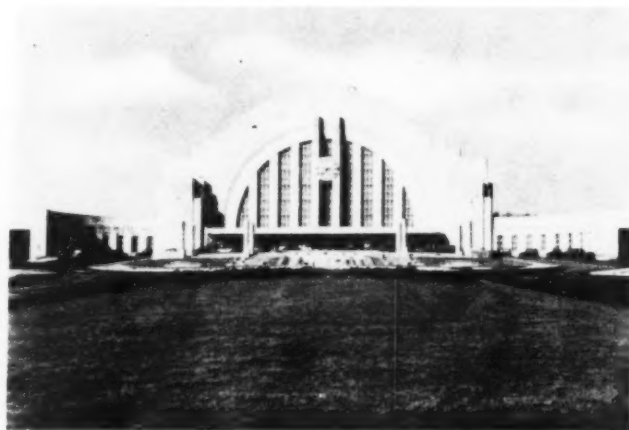
Beginning with a description of the civic scene and the city's background, the Netherland Plaza brochure, approximately 10½ x 13½ inches in size, leads the prospective visitor on a pictorial tour of the hotel. Every feature of the hostelry is shown and the story winds up with a reproduction of floor plans of several of the structure's 22 guest floors.

This brochure, produced entirely by photo-lithography, is

notable for the attractiveness of its layout and the superb use made of large, clear halftones. There is an abundance of white space on every page and type matter is large, well spaced and readable. In all, the brochure constitutes a powerful sales punch on the part of this hotel.

Not to be overlooked in the important resort market are the climate and health groups. These flourish in practically every part of the country. They produce an abundance of promotional literature. Indeed, this field depends almost entirely on the power of the printed work to attract the interest of and convince prospective visitors that here is a veritable utopia for the troubled body and mind.

As an industry, the resort field ranks high among the prospective buyers of lithographic services. And like many another fertile market, resorts are constantly on the lookout for the new idea, and the "different" twist.



..YOU ARRIVE
IN CINCINNATI

Here is part of a striking layout contained in the Netherland Plaza brochure which impresses the prospective visitor with its hospitality and many facilities for guests.

THE ROAD TO *More* SALES

THIS will be the theme of the Thirty-First Annual Convention of the Lithographers' National Association which will draw members of the lithographic and allied industries from all parts of the country to White Sulphur Springs, West Virginia, on May 12th, 13th and 14th.

THE convention will endeavor to arrive at a clearer understanding by lithographers of the selling problems facing them. The solution of these problems will be an integral part of the program.



Arrangements have been made for special railroad fares for those attending the convention. The famous Greenbrier, scene of the meeting, is equipped to assure all guests an unparalleled combination of business and pleasure.



*F*OR FURTHER
DETAILS ADDRESS:

Lithographers National Association
295 Madison Avenue : : New York, N. Y.

- **SALES**
- **MARKETING**
- **ADVERTISING**

A complete analysis of these phases of both the lithographers and his customer's business will be presented by nationally known experts. The basic conditions existing in various industries will be studied and the opportunities for lithographers to assist in stimulating sales will be spotlighted. The factors which control the purchase of lithographic materials by these various markets will be authoritatively discussed, and the viewpoint of the national advertiser will be presented.

**Here Are but a Few of the Important
Discussions on the Program**

- "What Does the Advertising Agency Production Manager Have to Tell the Lithographer?"
- "How Does the Advertising Agency Approach the Subject of Purchasing Lithography?"
- "What Is the Sales Manager's Demand Upon and Use of the Advertising Department?"
- "What Are the Factors Involved in Dressing Up a Package for Any Industry?"

PLAN TO ATTEND THIS OUTSTANDING CONVENTION

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APR

Photomechanical Progress

By J. S. Mertle

Director, Graphic Arts Division

G. Cramer Dry Plate Company

THE subject allotted me for this discussion is really a review of recent progress made in the photomechanical divisions of the American graphic arts. Such a subject is of necessity circumscribed in its sphere, for the simple reason that while progress is being made in various directions, the fact remains that nothing of revolutionary importance has recently been developed in any field of the printing world.

We are inclined to agree with the statement of a British photographic editor that the really great advances were made in the early days of photomechanics, when vast fields were waiting to be explored by fertile, inventive minds. The path was indicated by these early pioneers—it has remained for the workmen of succeeding generations to travel this path in the achievement of greater technical progress.

Confronted with this state of progressive intellectuality, the remarks we are about to make in this paper may be known to some members of our readers, but there may also be others who have not had the opportunity for applied study, and who are therefore unfamiliar with some of the subjects mentioned in this paper.

Since the basis of all photomechanical methods is photographic image, we shall open our discussion with a subject that continues to gain in widespread popularity in lithography—*dot etching*—or the tonal correction of lithographic halftones by systematic reduction of constituent dot size in the halftone image. The basic principles of dot etching are now too well known to require their review before this body, but some notice may be taken of two interesting developments, the purpose of which are to place dot etching on a still higher and more certain plane.

The Use of Electrolysis

The first of these is the etching of dry plate halftone images by the aid of electrolysis. This process is the subject of an American patent (No. 1, 892, 099), granted to Arthur W. Cornell, and assigned to the Forbes Lithograph Manufacturing Company of Boston, Massachusetts.

In the Forbes process of etching, recourse is had to a current of electricity, which is locally applied to any part of the image by means of an electrode, and which, by electrochemical action, is caused to exert a reducing effect on the dot-size wherever it is applied. It should be noted that the method is primarily intended for re-etching and highlighting—not for a general reduction, such as is secured by flat etching in a tray containing ido-cyanid, Farmer's reducer, or other solvents of photographic reduced silver.

Before utilization of electrolytic etching, the gelatin film of the dry plate is treated with an alum solution to augment its resistance to the mechanical abrasion induced by travel of the electrode over the moist surface of the film. The next step in the process is subjection of the image to an

New York Litho Club

ONE of the most energetic educational groups in industry is The New York Litho Club, which meets every month at the Building Trades Club, New York, to conduct a practical discussion that is always replete with valuable data for the lithographer. The article reproduced here was the address delivered before the March session by Mr. Mertle.

The Litho Club always attracts a large gathering not only of its membership, but of important technical lithographic experts whose names are bywords in the industry. After each meeting guests are invited to inspect a special exhibit of outstanding lithographic specimens gathered especially for this occasion.

The important technical discussions of the New York Litho Club stamps the organization as one of the key "Share Your Knowledge" endeavors of the graphic arts.

The Club's officers are as follows:

R. W. Brendel, president; W. H. Hussey, vice-president; Oscar Falconi, treasurer; W. H. Carey, secretary. Board of Governors: Alfred Steinruck, Eugene B. Martens, Charles A. Genentz, Max Reichel, William Borgstedt, Frederic Moulin, A. F. Rossotti, Henry Dietz, Jr., Joseph A. Slobey

reagent, which in itself possesses no action on the silver image, but which can be electrochemically converted into an active reducing agent.

The medium used for this purpose is a very concentrated solution of potassium ferrocyanid. To facilitate penetration of this solution into the gelatin film, and to retard evaporation during the progress of etching, it is suggested to employ a penetrating and stabilizing agent, such as tri-ethanolamin, which is added in small volume to the ferrocyanid mixture.

After being treated with the previously mentioned ferrocyanid-ethanolamin solution, the plate is placed on a glass-covered "light-table," where it is fitted into a metallic frame embracing two adjacent edges of the plate. By means of this frame, electrical contact is secured with the negative pole of an electrical source, a convenient form of which is an ordinary six-volt storage battery.

By means of a flexible conductor fitted on one end of an adjustable coupling, the positive pole of the battery is connected to a suitable electrode, which can be conveniently manipulated over any area of the plate surface. The electrodes consist of platinum wire and are of various shapes: some are in the form of a pencil and as such intended for re-etch-

THE PHOTO-LITHOGRAPHER

ing of minute details, while others are trowel or spatula shaped, so as to exert a uniform action over more extended areas.

In the process of etching, the artist merely applies the electrified "pencil" to any desired spot on the moist film surface, manipulating the electrode in the manner one would employ in the application of color or pigment, or, so to say, rubbing the electrode back and forth over the gelatin image.

At the moment of contacting the moist gelating film, the electrical circuit is closed, the current immediately beginning to convert the potassium ferrocyanid into potassium ferricyanid, one of the constituents of the familiar Farmer's reducer. The ferricyanid in turn sets up a reducing action on the metallic silver of the dot structure, thereby causing a reduction in dot size by reason of its greater action on the semi-opaque edges of the dot, and resulting in a consequential lightening of tone in the ferrocyanid-saturated areas of the image immediately adjacent to and in contact with the electrode.

The lightening action referred to obviously takes place in a positive, but the same operation can be carried out on a negative, should increased depth of tone be desired in the negative image.

Because of the great facility offered the artist both in application of the electrode and localization of effect, some very delicate results can be achieved. The etching action can be controlled in a ready manner, not only as to the dot size required, but also the area submitted to reduction. The method is especially efficacious in delicate highlight and shadow tones, as well as for the treatment of very minute details, which are always more or less difficult to correct by current methods of applying reducing solutions with the usual fine-pointed brush.

Etching methods of this type require an emulsion of sufficient tenacity and resiliency to counteract the danger of tearing, set up by the abrasion and attritional pull of the electrode on the surface of the emulsion. A plate of this character has been developed by the G. Cramer Dry Plate Company; this particular plate not only possesses the high resolving power and opacity necessary in an emulsion for dot etching, but also the required physical characteristics to offset the effects of abrasion or the moist film.

DOTVALHUESCOPE

The second item of interest to the dot etcher is the "Dotvalhuescope," an instrument recently designed by William C. Huebner, for the accurate measurement of dot size in half-tone positives. From the meagre details published about this apparatus, we gather that it is an optical instrument intended to project the images of dots on a matt-surface focusing scale equipped with a dot-wedge value scale, the various sizes of the dots being numbered from 9 to 1.

As briefly explained by Huebner, the dotvalhuescope consists of a work table similar to that of the average retouching table, on which the dotvalhuescope proper is arranged over a glass-bottom tray, in which the positive can be etched without inconvenience.

Suitable lighting facilities are provided for casting a beam of light through the positive and microscopic eyepiece of the apparatus, which in turn projects the image of the dot to the previously mentioned focusing plate, where the exact area of the dot can be measured on the dot-wedge value scale. The dotvalhuescope can be moved over any portion of the positive, with the light-beam device always in register with the dotvalhuescope lens.

The instrument will be intended for joint use with a specially prepared Color Atlas, showing the dot size of the respective colors contained in any particular hue. The dots in the positive will be etched to the particular size required for each of the primary printing colors, the dotvalhuescope accurately determining this size by actual measurements of the dots on the key spots of the positive.

The claim is made by Huebner that when all plates are thus etched to their required proper values, that the final color results will be more accurate than the present method of individual judgment on the part of the etcher.

A somewhat similar instrument is also being devised by the same authority for plotting and determining the accuracy of continuous tone color separation negatives, and their relation to correct color reproduction by such processes as rotogravure. This apparatus is called the "Colorvalhuesometer;" by its use, negatives and positives are corrected according to the readings on a meter connected with a photoelectric cell, which is also used in conjunction with a separate and special Color Atlas.

Since both these instruments are still in the course of improved development, more extensive information as to their sphere and utility can be expected in the near future.

DEEP ETCH PLATES

The deep etch plate is a logical and accompanying feature of dot etching, since the dot-etched positive can be printed down directly on the bichromated colloid used for sensitization of the metal plate. Deep etching of litho images is also gaining favor, but one wonders whether still greater progress could not be made if current methods of deep etch platemaking were simplified and rendered less expensive.

The task may appear difficult at this moment, but when one considers that at least 7 or more operations are at the present time required to produce the average deep etch plate, it does seem as though science and chemistry may eventually devise methods and materials that will render deep etching simpler and more certain in operation.

NICKEL TOP PLATES

That agitation against the high costs of deep etching exists is shown by the fact that substitute materials and processes are now before the public, the aim of which is to produce results similar to those obtained from deep-etched plates.

One of these are the newly introduced Nickel Top Plates, produced by depositing an electrolytic coating or film of metallic nickel on the surface of the ordinary grained zinc plate. The coating of nickel is of necessity rather thin, so as

not to obliterate the grain formation on the metal, but the sponsors of the process claim that the hard nature of nickel renders the grain chemically indestructible, although not impervious to mechanical injury, such as scratches.

A further claim of interest is that regaining of such plates by methods of mechanical abrasion is not necessary. The old method of chemically reclaiming used plates is instead employed: all ink, asphaltum or other agents are first removed from the plate with benzine or gasoline, after which the plate is painted over with a mixture containing a proprietary compound, "Silox", which is dissolved in water and made into paste form by the addition of Indian clay, before being applied to the plate.

The coating is permitted to dry spontaneously; it exerts no injurious action on the nickel, but attacks the insoluble albumen image, which is then removed from the plate by simply flushing with water, aided by light scrubbing with an aqueous paste of pumice flour.

Some care must be taken not to scratch or injure the film of deposited nickel, as exposure of the zinc base renders the plate unfit for further use, and necessitates mechanical regaining to remove the damaged film of nickel.

The technique of producing a photolitho image on Nickel Top plates does not materially differ from the regular procedure of the bichromated albumen process, although in company with all proprietary methods, special solutions and materials are recommended and supposedly required in every step of the work.

The sponsors stress the following particular advantages; 1) Economy of plate costs; 2) greater durability, by reason of the nickel grain resisting press friction; 3) increased beauty of detail in the reproduced image, and 4) greater strength of color in the lithographic impression on paper. Some excellent samples have been shown, but since the method has only lately emerged from the scientific laboratory, final judgment must be reserved until the process has met the severe demands of general application.

While nickel-surfaced plates are an interesting departure from the zinc or aluminum ordinarily used as a support for the lithographic image, employment of nickel deposition for the production of pseudo-intaglio plate from photographic negatives has been the aim of several inventors. This is merely another attempt to circumvent the labor and time required in regular deep etch methods; the claim is put forth that a plate having intaglio characteristics can be produced by electrodeposition in 20 minutes, as compared to the 45-60 minutes required for a deep etch plate from a positive.

Briefly outlined, the method of procedure is to produce an albumen-ink print on the grained zinc, but with care exercised to retain the greatest possible volume of ink on the developed image. At this stage, the plate is immersed in a nickel depositing bath and a film of metallic nickel (about 1/1000th inch in thickness) deposited on the exposed zinc. The plate is then withdrawn from the bath, and the image washed out with asphalt-turpentine, after which it is ready for the press.

The chief obstacle encountered in this method is the fact that the acid nature of the nickel bath frequently destroys

the ink-affinity of the albumen print, thus resulting in a "blind" image, which will refuse to attract ink from the press rollers.

DRY LITHOGRAPHY

While intaglio plates seem to be attracting the greatest lithographic attention, methods of other days are not entirely forgotten. Thus we see that the very old idea of dry lithography still continues to be of interest to those lithographers who desire to dispense with the necessity of applying moisture to the litho surface during the process of printing.

The original idea of employing a relief image has again been resuscitated by a Chicago firm of tin printers, who favor this process against those methods based on the use of special hygroscopic inks. There is admittedly nothing new about the Chicago process; it is nothing more than etching an image into relief on the grained zinc plate by recourse to the dragon's blood system of etching so popular in photo-engraving.

The zinc bearing an albumen-ink is gummed up and then heavily rolled up with an ink containing beeswax, and which has been thinned to the proper working consistency by the addition of No. 2 litho varnish.

The inked image is then dusted to saturation with dragon's blood, after which it is baked in an oven to amalgamate the resin with the ink design. The back of the plate and all areas desired to be protected are next painted in with an asphalt-naphtha solution, following which the plate is rinsed in water to remove the gum, and then etched for about 20 minutes in a dilute nitric acid bath, containing 2 ounces of nitric acid (C.P.) to 3 gallons of water.

A rather appreciable degree of depth is obtained, sufficient to entirely dispense with water during printing, and still not prove injurious to the offset blanket if the correct pressure between blanket and etched plate is maintained.

As might be expected, the process is best suited for moderately fine designs, or those in which no large areas of zinc are exposed for etching, either in, or between the designs. Since the depth obtained frequently is .005 of an inch, it is evident that if large areas were etched, the plate itself would be weakened by the removal of so much metal from its surface, with the possibility that it would break or snap on the cylinder when exposed to the strain of printing.

GELATIN RELIEF PLATES

Plates of this character, wherein the printing surface takes the form of a gelatin relief, have recently been introduced to letterpress printers as a competitive measure against planography.

The idea of employing gelatin reliefs as a printing medium is a perennial one—it dates back to the Swelled and Wash-out gelatin processes of the last century. The modern version of such methods is to use photographic plates or films, and to treat the developed and fixed image with chromate solutions in an effort to secure the necessary relief.

A number of such processes exist at the present time, but none of them are achieving widespread application; their main impediment is the well-known unreliability of gelatin

when intended for use as an actual printing surface.

As to whether such plates are serious competition for the planographer is a very doubtful issue. A line or halftone negative is required in both processes. The lithographer has merely to insert the negative into his form and quickly produce an albumen pressplate, whereas with the gelatin method, a positive must be made by contact on the photographic material, and this subsequently treated to produce a problematical degree of relief. The gelatin plate must next be blocked type-high, and then locked into the type form before being placed on the press.

The lithographer can easily lay out any number of $8\frac{1}{2} \times 11$ forms (16 being the usual limit) and print them down on the sensitized metal in his vacuum frame as a single unit, with the consequential speedy production of a pressplate for small editions.

The letterpress printer, on the other hand, must laboriously produce a bulky and heavy form, and then perform whatever makeready is required before starting his press.

Coupled with the lithographer's platemaking advantages is the added speed of the offset press, to say nothing of the employment of a wider variety of cheap papers—all of which seems to preclude the possibility of gelatin relief plates being a serious planographic competitor.

VARIABLE DENSITY SCREENS

The recent patent (D.R.P. 616,581) issued to a German dye concern for the production of a variable screen or photographic copy of the regulation halftone ruling, recalls other efforts in this direction. Among these were the screens of Ronald Trist, Victor C. Ernst, H. G. Knudsen, and the screen used in the Klischeephoto process, introduced in 1927 by the German firm of Klimsch & Company.

While differing in their mechanical and optical structure, the basic principle of all these screens is that the dots or elements are not sharply circumscribed by an opaque ruling, but consist of dots wherein the center possesses the greatest degree of opacity, this opacity gradually decreasing towards the edges of the dots.

Among other claims for screens of this character was the contention that they produced superior highlight effects in lithographic halftone negatives, an assertion that has not been substantiated in practical application.

A frequently contemplated field of endeavor for variable density screens are those methods in which the screen is placed between a continuous tone negative and sensitive film or plate, and a halftone positive then produced by contact printing.

The main difficulty with such methods is that a very particular negative—one embodying a brilliant image with a long gradational scale—must be utilized for best results. Negatives with strong highlights are unsuitable, as the opacity of the highlights prevents their rendition in the time required for a truthful rendering of the middletones and lower shadows. This necessitates removing the negative and giving an auxiliary flash exposure through the screen, a practice rather destructive to sparkling detail.

Flat negatives are also unsatisfactory—the lack of contrast is frequently accentuated in the resulting positive, as

no opportunity is given to introduce contrast by the adjustment of screen distance or lens stops, such as is performed in regular halftone photography.

In this latter case, something might be done in the choice of the film or plate to govern contrast through the employment of emulsions of vigorous working quality. The same plan has also been attempted in producing halftone positives from excessively contrasty negatives: we have, in fact, witnessed instances where high-speed portrait emulsions were used in an attempt to secure a dot formation in the highlights. But since the resolving power of such emulsion is very low, we leave it to your imagination as to just what type of dot structure was secured. The dots were woolly and "mushy," and not infrequently were split up into diffraction crosses—the dot then consisting of four separate elements, which provided a printing surface that was extremely difficult for the offset pressman to retain during an extended press run.

Photographic halftone screens are nothing new in the trade: they date back to the wet collodion copies of rulings made and sold by Wolfe in the infancy of halftone. As to just what possibility there is for a variable density screen is a conjectural matter; they have been frequently introduced, and just as frequently have failed to meet with general approval in halftone reproduction.

METALLIC HALFTONE SCREENS

While on the subject of halftone rulings, it may be well to devote a few words to a new innovation in screen manufacture—the production of halftone screen that consist of a mesh metallic copper or any metallic combination capable of being electrolytically deposited.

So far as we know, the screen have not as yet been introduced on a commercial scale, though experimental trials have been made by a number of photoengravers, who have reported encouraging results.

From the scanty information available, the screens are stretched taut on a frame, and in this way are brought into a more or less plane position before the sensitized photographic plate.

When viewed under magnification, the apertures of the screen are not as sharply defined as those in a ruled and etched glass grating; in many instances, the apertures appear more or less circular in shape, though the claim is made that the shape of the aperture can be controlled to a broad extent in the process of manufacture.

The thickness of the metallic film is usually about .003 inch; it therefore follows that the mesh is rather delicate and very easily bent or dented, a condition which would seem to incur difficulty in securing a uniform screen distance over a large area, especially with a mesh that has been used several times. One also wonders whether minor reflections do not take place on transmission of the light pencils through the metallic apertures?

According to advance statements, the screens can be made in any mesh up to 400 holes per inch. The process of manufacture, euphoniously termed "Basically Controlled Ionic Migration," is one of electrolytical depositions, in which the

screen is produced in the form of a metallic sheet or film, perforated with regularly arranged holes or apertures that correspond in number to the square apertures of the standard halftone screen.

STRIPPING DRY PLATES

Increasing demand by advertisers for pictorial effects incorporating several illustrations in various combinations, have stressed the necessity of a photographic medium that can be readily stripped and inserted into any predetermined position. Stripping plates and films are nothing new in the Graphic Arts, although heretofore they have been more or less limited to process emulsions, or those intended for line and halftone photography.

But the growing importance of continuous tone methods, such as rotogravure, have shown the practicability of stripping plates coated with long-scale emulsions for use in indirect and intaglio methods of reproduction.

The G. Cramer Dry Plate Company has met this state of affairs with an improved stripping plate, coated with either process or continuous tone emulsions. Photographic manipulation of the plate is identical with that of regular material, but after drying, the plate is coated with rubber and collodion as in the wet collodion process. After cutting through the collodionized film with a sharp knife, the plate is placed in a tray of clear water, where the film quickly detaches itself from the glass support, and can be stripped and inserted exactly as is done with the collodion films.

Considerable interest has been shown in the plate by litho and rotogravure establishments, particularly for the creation of intricate illustrative effects, and especially where the employment of continuous tone images is essential.

ROTOGRAVURE

Previous mention has just been made regarding the growing importance of rotogravure, but it is doubtful if many persons not directly connected with the industry are actually aware of the immense strides rotary intaglio printing has made in the last few years.

This applies not only to journalistic employment of rotogravure in newspapers and magazines, but also to commercial gravure in direct competition with lithography and letterpress. Since this is an item directly affecting the lithographer, a short review of recent rotogravure activity may be of interest at this time.

Possibly the best way of illustrating the progress of commercial gravure is to show the growth of a Mid-Western plant specializing in this type of work; the entire output of this plant is restricted to commercial gravure, and not, as is so often the case, partially devoted to the production of newspaper supplements.

The original installation erected in 1922 comprised two small presses, located in a building of 20,000 square feet of floor space; at that time the idea was entertained of subletting a large share of this space until such instance within their lease of 5 years that additional space might be required for the roto plant.

To the surprise of the executives, the entire location

within four years proved much too small for their continually expanding equipment, brought on by increasing pressure of business. The installation had grown to six presses, and in 1927 the plant was moved to a new building of 50,000 square feet of floor space.

Within two years, however, even these quarters proved too small, and in 1929 an additional 30,000 square feet were added to the premises, resulting in a plant of 80,000 square feet. The original installation of two single-color presses has grown to 12, of which 6 are of very large size, some of them capable of simultaneously printing three and four colors. The daily production of the pressroom is about 4,000,000 folded units per 24 hours. But even this colossal production is not meeting demands, and plans are being considered to again increase the size of the plant to cope with present and future business.

Here we have a plant started only 14 years ago, but in this relatively short time it has grown to at least 10 times its original size. How many lithographic establishments have been able to keep their personnel and equipment of 1922 consistently occupied, to say nothing of enlarging their quarters to double-size, let alone a ten-fold increase of business premises?

We do not mean to infer that lithography has not progressed; such a statement would be nonsensical, in view of improved quality of work through use of dot etching and deep etch plates, and increased production by means of the newer types of three and four color offset presses.

Since the subject of printing presses has just been given mention, it may be instructive to again revert to rotogravure, giving a few details on the new presses now being installed by the Crowell Publishing Company (Springfield, Ohio) for printing sections of their various publications by the intaglio method.

We are indebted to Mr. Edward Hunter, Gravure Director of the Crowell Company, for the details and data given here. A battery of three presses is under course of construction, but at the present time, only one is in actual operation.

The presses are being built by the Goss Company, each press weighing about 80 tons. The press is about 60 feet long and 10 feet wide, with a cylinder printing surface of 60 inches in length and 45 inches around. Thirty-two pages of the respective Crowell publications are printed on each of the cylinders.

The press is of four-color construction, and delivers about 400,000 printed sheets from each set of copper cylinders, the speed of the press at the present time being about 15,000 cylinder revolutions per hour.

The ink and paper consumption for 8 hours, running six colors—four on one side, two on the reverse—is approximately 1,000 pounds of inks and 15,000 pounds of paper, but since the press is operated 16 hours per day, the actual consumption is twice this amount of material.

While it is freely admitted that this is a specialized type

(continued on page 62)

More and Better Offset Papers

Expansion of the Process Reflected in Development of Wide Variety of Finishes to Further Enhance Results

THE transition that has taken place in the offset papers, together with the development of new type sheets, has opened offset to wider fields than many ever thought would be possible.

Gone are the days of grays instead of blacks; it is possible to produce in four colors today what formerly took at least six or eight.

The first change that took place in the paper industry was the development of a hard surfaced and smooth paper that would work on an offset press. Originally offset papers were all soft, toothy and low in density. This softness was the paper makers' answer to a demand for a sheet that would take on and give off moisture quickly and thus help eliminate the troubles of wavy edges and curl. The tooth was necessary to help prevent offset. The low density allowed for rapid penetration of the ink, and assisted in rapid movement of moisture in the sheet going through the press, for if the moisture was allowed to penetrate the sheet quickly, it eliminated curl.

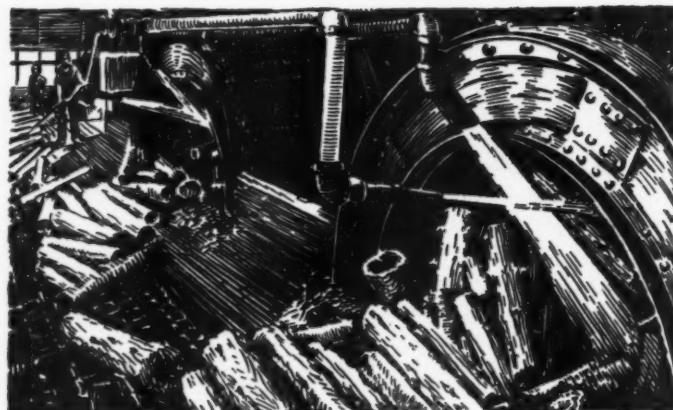
The ink actually dried just under the surface and hence "blacks" were gray instead of black. A layer of ink had to be placed on the paper in order to size it. Light inks were always applied first and darker inks applied on top of them,—naturally any variation in sheet size produced lined edges to solids and spoiled the appearance of the job. You remember it was only a few years ago that most offset jobs carrying art work resembled water color type of illustrations.

All Phases Progress

The plate making process, ink manufacturer and press manufacturer were working to improve their products. This development work encouraged the far sighted paper mill to develop a smooth, hard surface, non-reactive sheet of paper, and mills making this type of sheet have seen a tremendous growth in sales during the past few years.

The smooth surface enables the offset lithographer to produce work with a sharp, clear outline. This was not possible with a low finished sheet, due to distortion. The hard surfaced sheet eliminates fuzzing and linting so common with soft papers and also allows the offset lithographer to produce four color process work having a real brilliancy. Each small dot of ink stands out on the sheet, so that the brilliancy and sharpness of the reproduction is dependent almost entirely on the plate, press clothing and ink used.

This type of sheet has brought about a product with high opacity. Originally the offset lithographer was dependent entirely upon the bulk of the stock used. Now, with a sheet that holds the ink on the surface, where it should be to im-



A step in the process of transforming wood into paper. This illustration shows barking drums and sorting conveyor. Courtesy of International Paper Co.

part brilliancy and clearness, the cross section of paper is not made transparent by heavy absorption of varnish or pigment. Hence, the reduced bulk of these hard papers has not affected either opacity or ink show-through.

The development of a sheet having these characteristics was not easy for the paper mill. Lengthy studies were made covering the amount of moisture a sheet will retain under varying degrees of relative humidity and many papers are made today with a pre-determined amount of moisture in them.

If moisture content alone could bring about the elimination of press room troubles, they would have disappeared long ago. To begin with, most offset papers are produced with a combination of different pulps as well as the same pulp beaten differently. All pulp is hygroscopic; that is, it absorbs or gives off moisture, depending on the surrounding atmosphere. Unfortunately different pulps will carry different amounts of moisture at the same percentages of relative humidity and the same pulp will often carry different amounts of moisture at the same atmospheric humidity, depending upon its treatment.

Thus it can be seen that paper, to have the least possible tendency to react under varying humidities, needs much more than a controlled moisture content.

The study actually went back to the ingredients used in making the paper, the formation of the sheet, its like-sidedness or ability not only to look alike on both sides, but act alike, the proper and careful removal of the water in the sheet, as well as the calendering action, so that there will be

(continued on page 50)

Preparing Copy for Reproduction

**Different Color Hues and Shading Values
Constitute a Matter to Be Carefully Considered
by the Lithographer Seeking Better Results**

By GEORGE M. DAVISON.

Sales Manager, Higgins & Low, Inc.

THE high fidelity of photo-lithography in reproducing color copy has come as a tonic to the graphic arts. While this is generally well understood and agreed, yet the sources and choice for preparing photographic copy or art work for color photo lithography are not as well understood as they might be.

Let us consider and discuss the two major ways of handling black and white photographs that are to be made into color copy. The choice of two methods is available. They are color toning and color retouching.

By chemical solutions of various kinds and compositions the black and white gradations of the photograph to be toned are changed or transmuted into exactly similar gradations of the various colors desired. This is accomplished by treating each area separately, masking out everything except the particular area to be treated. It is as if the treated section of the original photograph had been taken in color instead of black and white.

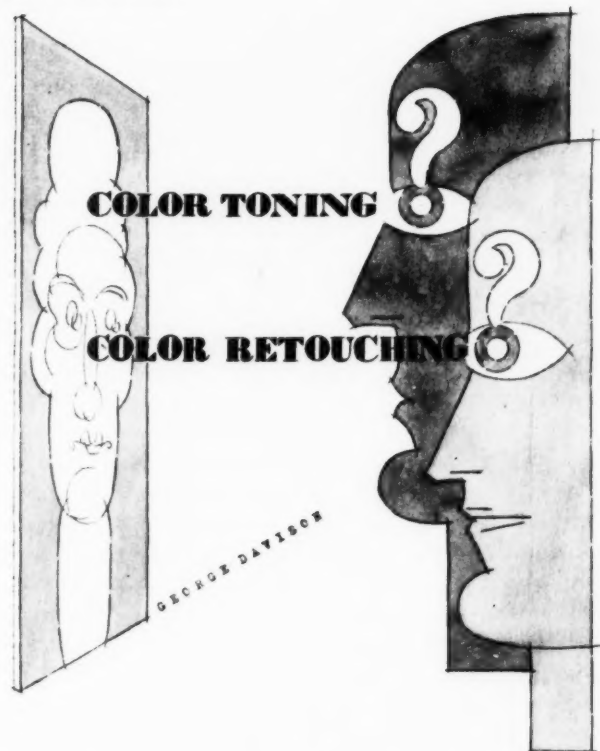
Toning eliminates any chance of blacks "striking" through the copy after the job has been completed, because no black is left on the photograph. A chemical change has taken place, completely transmuting the black and greys into color. This does away with the old "bug bear" of the danger of blacks showing up through the transparent color or dye superimposed on it. In toning there is no superimposition of color over black.

Results of Toning

The results of color toning are like direct color photography excepting that you have the option of selecting the colors and controlling their intensity. Color toning has a naturalness which is typical of anything that is natural and direct. Those who like all the "truth" that is to be found in a good photograph with the blacks transmuted into proper color relation, "go strong" for the toning method.

This method varies with the effect to be attained, for the effects vary. However, it does differ from toning in that it relies on the general use of airbrushing and hand painting to cover the areas of the photograph, whereas the toning process does not.

Naturally if most of the photograph or all of it is treated as a base for color to be applied all over it, it has the opportunity of being exceedingly flexible to attain any effect desirable. Effects can be attained, all the way from coloring the photograph as a colored photograph, to a flat treatment of areas which make it a poster. Poster, illustrative, deco-



rative and photographic are some of the treatments to be had by this method.

Any distorted form, unhappy shadows, or sunlight that creep into the photograph are easily painted over. Soft edges can be hardened while hard edges can be made soft.

From the above two methods, color toning and color retouching, it is reasonable to make the following conclusions. While it isn't to be assumed that every job must be either a 100% color retouch job or a 100% toning job, yet for general classification they are so divided. We know that a little of each method is often used in many jobs and that this is as it should be. In a toning job, there is often recourse to using opaque to redraw distorted areas or add new elements where necessary. The same is true of the retouched photo. Perhaps in the beginning certain transparent effects are desirable and can only be gotten by toning.

Care should be taken that whatever method is used, all black (or photographic) areas are completely covered so that no "surprise blacks" will appear in the finished printed job.

The use of toning or color retouching depends on the job and the effect you wish to get, as well as the costs entailed.

(Continued on Page 44)

CREATIVE SELLING

The Author Continues His Discussion of the Factors That Tend to Increase the Effectiveness & Profits of the Salesman

By
WILLIAM WOLFSON
Ardlee Service, Inc.

BACK of creative selling is *creative thinking*. This was indicated in a suggested definition, already given, and here repeated:

Creative selling is any sale secured by means of creative thinking, resulting in business which otherwise never would have existed.

As I review this definition, and my previous article, I am forced to the conclusion that this definition was penned in order to present creative selling in its highest form; to segregate this type of salesmanship and to show that the usual tactics of the alert, intelligent salesman did not reach this height. A more comprehensive definition would be this:

Creative selling is any sale secured by means of creative thinking, resulting in business which otherwise never would have existed, or business secured through such distinctive mental application.

It is with the latter part of the definition with which this article is concerned. A recent experience of mine will do as an example. The fact that the job involved was produced in our plant, that we have gained a new customer who swears by and not at us, is proof that this kind of selling pays.

A gentleman, a publisher of small manuals, called at the office to get a price on the production of a sixteen page booklet or original humor. He was also the author, and asked my opinion of his work. Gradually, I veered the conversation around to the marketing of the booklet and other angles. After I had secured the data I wanted, I opened fire:

"Alright!" I told him; "I'll take this booklet in hand."

An odd expression came to his face. Politely sarcastic, he responded: "That's very kind of you, Mr. Wolfson, but—"

"Please don't say it," I urged, "until I'm through. I know what you have in mind, still what I propose will enhance the possibilities of your booklet amazingly."

(INCIDENTAL NOTE: Many salesmen have told me people often resent suggestions, the intrusion of one's own ideas. This is true. Be very careful. Unless you are asked for your ideas, or unless you are sure you have something overwhelming to advance, you cannot bring them into the picture abruptly.)

There is no need to submit the full exchange of words. In brief, what my visitor brought me was a number of puns, self-styled humorous paragraphs, etc. These were based upon old classical quotations. After I sketched what I had in mind, he became enthusiastic, anxious for me to go ahead; and my price for production and my personal services was not questioned.

First of all, I altered the title page. Under the title he had the line, "By A. Punster." This I deleted, and in place

thereof ran: "Pages That Entertain and Pages That Teach How to Originate and Use Humor in Social and Business Life."

For his Introduction I substituted the following copy:

Clever conversationalists, those quick at repartee, are looked upon as a class apart. Yet anyone can readily cultivate the ability to contribute original *bon mots*, whimsical twists, gentle humor or sharp thrusts. All that is required is understanding—and a method.

A vast difference exists between a teller of funny stories and he who seizes upon an opportunity to voice a neat turn of expression. One is just a parrot; the other, an alert creator. Even professional comedians, no matter how skillfully they perform, merely enact in public what they rehearse in private. They artificially devise appropriate situations. Rib-tickling, side-splitting, robust humor may be dependent upon time, place or occasion. Taken from such setting, the brilliance fades.

The foundation for the pun, jest and witticism are familiar classical quotations, current and popular phrases. These abound in abundance; and furnish the raw material to be utilized. The contents of the pages which follow indicate the treatment.

It is suggested that the reader practise with quotations and phrases, no matter from what source derived. Popular songs, slogans, proverbs, etc. make good material. Let him imagine situations where they might be effectively applied. Often he can, with some maneuvering, factually bring about these situations. Thus he develops himself to take advantage of unexpected situations experienced in the everyday affairs of life.

In order to indicate possible applications, three examples of a varied nature are given.

EXAMPLE ONE—Conversational. Seven congenial people were riding in a car on the way back to the city from a week-end party. One member, the driver, suffered from an unquenchable thirst; and he made frequent stops to toss off a glass of water. All were convulsed with laughter when someone innocently asked: "Say, Harry, how many miles can *you* go on a glass of water?"

EXAMPLE TWO—Business rivalry: The head of a five-million dollar corporation had a finger in too many pies. He devoted himself to outside deals which never proved successful. The high executive of a competitive organization branded this man and made him a laughing stock by

(continued on page 56)

Out of the Package



Onto the Holder

and YOU'RE READY! ...with Kodalith Stripping Film

IT'S just as simple as that! With Kodalith Stripping Film (Normal) negative-making becomes a speedy, convenient process. No more troublesome plate-making operations; no more waste, bother, or danger from the handling of a score of chemicals.

Kodalith Stripping Film (Normal) comes ready to use as you take it from the box. Just place it on

a stay-flat holder and you're all set to make your negative. No expensive new equipment, no new lighting system is needed. Your arcs are ideal illumination. Kodalith is always ready in an instant to help you get fine, uniform results.

Write today for a demonstration of this modern stripping film. We will promptly arrange to show you how simply and efficiently it works.

Eastman Kodak Company, Graphic Arts Dept., Rochester, N. Y.



I know Offset Inks and these are O. K. with me!"

Offset Pressman. I know Offset Inks. Look at this four-color sheet. The inks have all the qualities I look for—clean, concentrated colors that do not lose purity when they are reduced, nor show the slightest trace of bleeding when the water hits them. But the way they worked—on the press—on the blankets—that interests me.

Research Chemist. Why? What did you notice?

O. P. Well, take yellow inks. They are often trouble makers—pile on the blanket—affect the other colors. But these inks strip clean. Never saw inks strip so clean.

R. C. I'll tell you why. These inks are the result of scientific principles applied by careful research and long, practical tests in pressrooms.

O. P. Well, you can't make Offset Inks by guess and by gosh—you need plenty of careful study. But I can tell whether the research was on the right track by the way the inks work on the press.

R. C. Have you noticed anything else about these inks?

O. P. Yes, I have! They are better in holding up on solid areas, and at the same time they stay open on fine lines. You know, we often have both in the same copy.

R. C. Anything special you want to say about the Black?

O. P. Yes! It is awfully hard to get a good Offset Black. That Black of yours is the best I have ever used—holds up on the large solid areas and keeps the light tints clean and open. Your colors are good, too. It has been hard to get a good Red. Lots of times we had to use a second printing of pink to get a bright enough Red. I'm not one of those Offset Printers who have an idea that only certain manufacturers

can make certain colors. I cannot see any reason why a manufacturer who knows how to make one color right cannot make all of them. I am satisfied that you people have proven that point. All your colors are of the same uniform quality.

R. C. That is true! But remember that while the quality is uniform, each color requires individual formulation and careful selection of the correct pigments and varnishes. These inks are the outcome of a fundamental study of Offset problems, which uncovered facts we utilized in the improvement of Offset Inks.

O. P. Well, that's your business. But I know Offset Inks—and these are working swell!

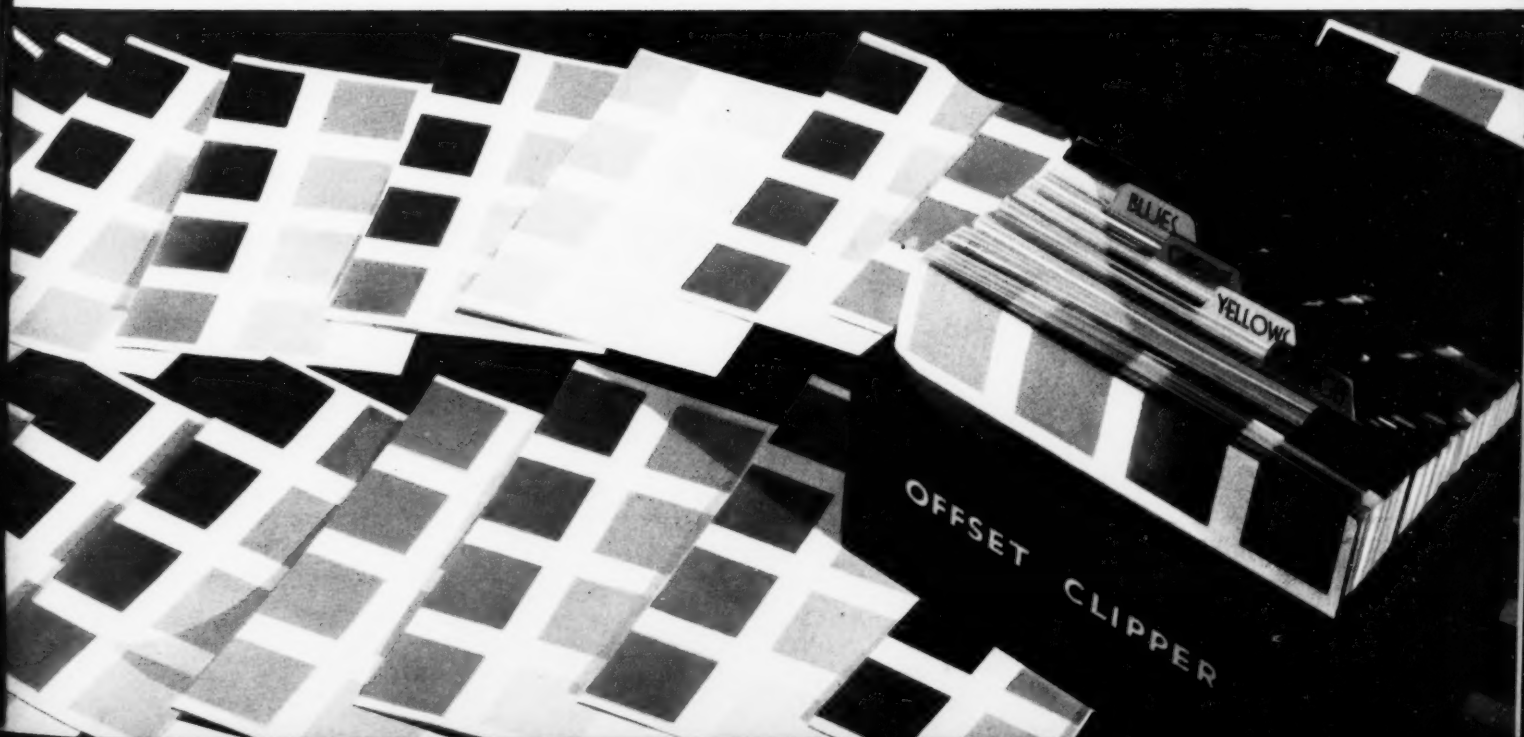
Conversations not unlike this have been repeated in pressroom after pressroom, evidence that the IPI Lithographic Products Division, with these improved Offset Inks, plus a complete line of Lithographic supplies, offers a service no Offset Printer can ignore.

The IPI representative will be glad to tell you about our Offset Poster Inks and Inks for Tin Printing.

SEND FOR THE IPI OFFSET CLIPPER

This page shows the IPI Offset Clipper, three-quarters actual size. Sheets filed according to hue may be removed, "clipped" in 8 different color steps and attached to jobs as specimens. Refills easily obtainable. 37 colors, each in 8 steppings from solid to 10% tint, on both Offset and Litho coated paper. Booklet gives characteristics of each ink. Get in touch with the nearest IPI Branch and your IPI Offset Clipper will be delivered to you. The supply of these molded plastic cabinets is limited. Requests will be filled in the order received.

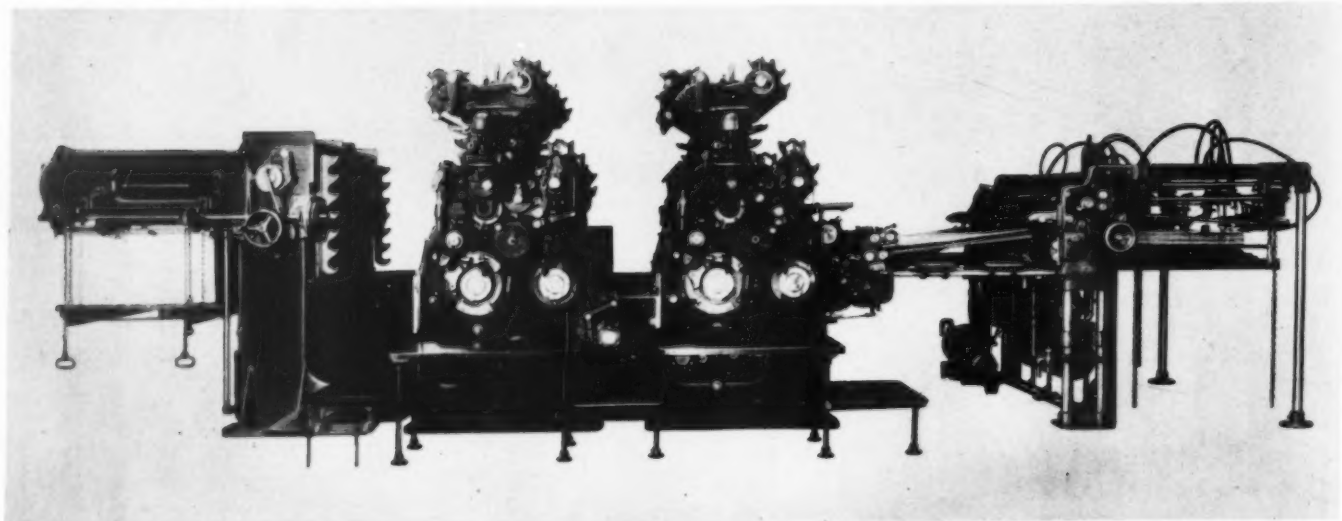
ipi LITHOGRAPHIC PRODUCTS DIVISION
OF THE INTERNATIONAL PRINTING INK CORPORATION
Atlanta Baltimore Battle Creek Boston Buffalo Chicago Cincinnati Cleveland Dallas Detroit Kalamazoo Kansas City Los Angeles
Milwaukee Minneapolis New Orleans New York City Philadelphia Richmond Rochester St. Louis San Francisco Toronto Washington, D. C.



Why

UNIT CONSTRUCTION

Means Increased Efficiency



Miehle Two-Color Offset
Press—Unit Construction

With

THE MIEHLE OFFSET PRESS

Unit construction, as embodied in the Miehle Offset Press, provides a standardization of parts, plates and jobs that simplifies and speeds up production. Every unit has identical operating mechanism, regardless of whether the press is single or multi-color. The parts of every unit are completely interchangeable with those of any other unit of the same size. A pressman who has learned the operating and adjusting of a Miehle single color press has learned the necessary adjustments of the entire line, regardless of size or number of color units . . . Unit construction adds to the utility and versatility of the Miehle Offset Press and accurate register at speeds of 4100-5000 impressions per hour makes it highly profitable for the production of all classes of offset work. Write for illustrated folder and full specifications.

The
Miehle
Offset Press

POWERED BY
KIMBLE MOTORS

SIZES AND SPEEDS

No. 69 — 46 x 67½ 4100 per hour in accurate register
No. 57 — 41 x 55½ 4500 per hour in accurate register
No. 44 — 29 x 43 5000 per hour in accurate register

MIEHLE PRINTING PRESS & MANUFACTURING CO.

CHICAGO

HARRY W. BRINTNALL CO.
San Francisco — Los Angeles — Seattle

NEW YORK

BLACKWOOD OFFSET

Offers the lithographer and advertiser quality in halftone, line and color reproduction. Its texture accentuates values and radiates an atmosphere of richness and quality.

BLACKWOOD OFFSET is easy running on the press. It prints a sharp, clear impression, does not pick up lint and saves on transfer plates and blankets.

YET BLACKWOOD OFFSET IS MODERATELY PRICED

It is a standard grade, stocked in plain finish in all regular sizes and weights, and can be furnished in fancy finishes, regular or special sizes, in case lots (or more) from mill.

**SAMPLE BOOK SHOWING ALL WEIGHTS AND FANCY FINISHES AVAILABLE.
FURNISHED UPON REQUEST.**

MARQUARDT & COMPANY
I N C O R P O R A T E D

Fine Papers

153-155 SPRING STREET

NEW YORK

Lithography Performs an Outstanding Sales Promotion Job

How a Well Known Advertiser Utilizes This Process Effectively in Energetic and Productive Selling Program

JUST as an individual lithographer can create interest on the part of a prospect by presenting an imposing list of the well known concerns he serves, so an industry can—in a larger way—impress a whole prospective market with the variety and standing of users of its products and services.

This is particularly true in the case of photo-lithography, which can happily boast a veritable "blue book" of users comprising the best known names in the commercial, industrial and institutional life of America. Examine the advertising material of almost any industry and you will find a constantly increasing portion of its promotional material produced lithographically. Because of this process' flexibility and economy, more and more outstanding advertisers are finding it practical and desirable for their sales interests.

By citing outstanding instances of lithography's achievements, establishments engaged in this industry can inject into their sales story powerful testimonial data that succeeds in telling the prospective user—over and over again—"Photo-Lithography can do for you what it has done for scores of other well known advertisers".

Readers in this publication will recall the "Lithographic Parade" presented in one of our recent issues. The outstanding jobs described and illustrated at that time naturally covered only a smattering of lithography's performances during the past year. Space limitations ruled out countless other details, quite as impressive and as important to both lithographic producer and user alike.

Extensive Mail Campaign

Among the prominent users of lithography whose promotional material has consistently struck a high mark of effectiveness and power should be mentioned, The Elliott Addressing Machine Company, Cambridge, Mass., one of the best known manufacturers of office appliances in the country. Under alert leadership of Tim Thrift, the firm's advertising staff conducts a direct mail campaign that is praiseworthy for its thoroughness, consistency and execution. Lithography plays its usual significant role in assisting Tim Thrift's cohorts to do a bangup selling job.

Included in this direct mail activity are the very selling instruments which the proponents of lithography have long pointed out as "right down their alley." Chief among these are catalogs, broadsides, "blowups" and sales manuals.

Because even the most efficient reproduction process known is fruitless in the hands of a user who has neither the ability



The sales punch that marks most of the Elliott literature is aptly illustrated in this reproduction of one of the broadsides produced by photo-lithography.

nor perspective to conceive and execute a sound direct mail drive, it is worthwhile examining in detail the *modus operandi* of the Tim Thrift brand of promotion—the kind that get results.

Here, for example, is Catalog "B", a 20-page and cover specimen of photo-lithography that shows a wide variety of stock designs for post-card advertising that can be produced on one of the Elliott Company's popular office appliances. The applicability of these designs is carefully broken down for users of the machine, by industry: cleaning, dying and pressing; auto service and supplies; florists; restaurants; fuel dealers; druggists; hardware stores; churches; book sellers; jewelers; furniture dealers; children's wear establishments; men's clothing and haberdashery; shoe shops; electrical suppliers; provision stores; emblems; and miscellaneous.

Lithographed in a single color, this catalog employs a simple cover that is featured by a reverse (white or black) strip. The catalog packs a powerful selling punch for the stock design service it features and is replete with "reasons why" users will find the service useful. A single sheet order form, on different colored stock, is enclosed. Price schedules are included.

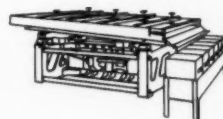
To advertise vocationally instead of generally, Tim Thrift's department has prepared a separate "blowup mes-

RUTHERFORD

Graining Machines and Whirlers

We build everything for the lithographer: from the camera to the press. Our giant all-steel

graining machines have made an enviable reputation for themselves,



and our less expensive ones, built in three sizes, do the same high quality of work on a

smaller scale.



Our new "Junior" plate whirlers bring senior quality to even

the smallest lithographic plant;



and our "Planograph" line, tried and proved

through the years, is made in five standard sizes to meet every need.

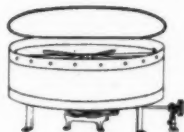


Now

and then we find a lithographer who wants machinery custom built. Our super "Reliable"

whirler is made for him, equipped with the finest regulator, starter, tachometer and anything

else he wants.



When you're in the market for a whirler, graining machine

or any other equipment, it will pay you to remember that our factory has had just sixty-four

years' experience building lithographic machinery, all to Rutherford Precision Standards!

RUTHERFORD MACHINERY COMPANY

DIVISION GENERAL PRINTING INK CORPORATION • 100 SIXTH AVENUE, NEW YORK

Branch Offices: CHICAGO, LOS ANGELES, CINCINNATI. Factory: EAST RUTHERFORD, NEW JERSEY

BUYING SEASON
FOR USED CARS
IS RIGHT NOW

Hudson & Terraplane News

Published in the Interests of the Hudson and Terraplane Organization Everywhere

MOVE TWO USED
CARS FOR EACH
NEW CAR SALE

VOLUME 3
NUMBER 4

NOW IS TIME TO KEEP UP USED CAR EFFORT

Take
a Tip!

sage" for each of 25 lines of business. Some feature of each line is taken as the cue and the applicability of the Elliott equipment to that field is stressed. One such "blowup", for instance, is addressed to Hudson and Terraplane automobile dealers. A portion of the Hudson and Terraplane News, a house organ that reaches dealers, is reproduced in part, showing the headline, "Now is Time to Keep Up Used Car Effort".

"Take a Tip", advises the Elliott advertising, which then goes on to show how car dealers can reach used car prospects quickly and economically. The Elliott message throughout is geared to the Hudson and Terraplane theme and in this way the prospect receiving the message is treated to a concentrated sales dose.

Part of the large broadside, in this case a 17 x 22 sheet, is reserved for a special small folder which gives further details of the Elliott plan. A return postcard is also attached for reply.

Another of the Elliott broadsides directed to a specific field deals with shoes. This is also a 17 x 22 sheet, lithographed in two colors. Seven typical shoe ads are reproduced, showing a variety of layout and copy treatment calculated to arrest the attention of any shoe merchant. When the folder is completely open the full Elliott sales story is revealed.

Large Run Utilized

In the campaign now under discussion, the Elliott Company directed the 25 separate broadsides to a total of 125,000 prospects. The lithographed work was divided between Spaulding-Moss Company and Bailey Press, both well known Boston lithographers.

More elaborate than any one of the promotional pieces spotlighted above is the impressive sales presentation used by Elliott salesmen. This is a 10 x 13 Spiral-Bound book, lithographed in two colors throughout on actual linen cloth. The manual performs the dual function of building prestige and revealing the company's entire line of machines.

The heavy black cover is gold-stamped with the legend, "35 Years." The first page following the cover continues this theme by illustrating the first modest Elliott factory with the successive improvements over a three and a half

The dominant note of one of Elliott's "vocational breakdowns" is reproduced here. This was one of the mailing pieces which totaled 125,000 during the entire campaign.

decade span. Twelve different competing companies have gone out of business during this time, it is pointed out, and the ruggedness and stability of the Elliott organization is stressed. Pictures of the founder and his son together with their long list of patents and actual samples of the Elliott stencil of 1900 and the stencil of today are shown in the pages that follow. The bulk of the manual is devoted to descriptions and illustrations of the full Elliott line of addressing machines and accessories.

A sturdy linen cloth was selected for the sales manual's pages because of the continuous wear to which salesmen subject such a book. In addition, the special stock further enhances to the quality appearance and distinctive layout that mark the book.

As a staunch supporter of the power of direct mail advertising, Tim Thrift reveals the soundness of his sales story by practicing what he preaches. And in choosing lithography as the production medium for a large volume of his promotional material, Mr. Thrift adds his testimony to the thousands of other alert advertisers who utilize the process consistently and profitably. That he is an ex-president of the Direct Mail Advertising Association and founded and published "The Mailbag" for many years, only stresses the point.

Named Distributor for Full International Line

Announcement has been made that Baldwin Paper Company, New York, is now a distributor of the complete line of mill brand papers made by International Paper Company. Adequate assortments of the following are being stocked by Baldwin:

Adirondack Bond and Ledger; Ticonderoga Book, Text and Vellum; Saratoga Book and Cover; Champlain Book and Text; Lexington Offset; Beeswing Manifold.

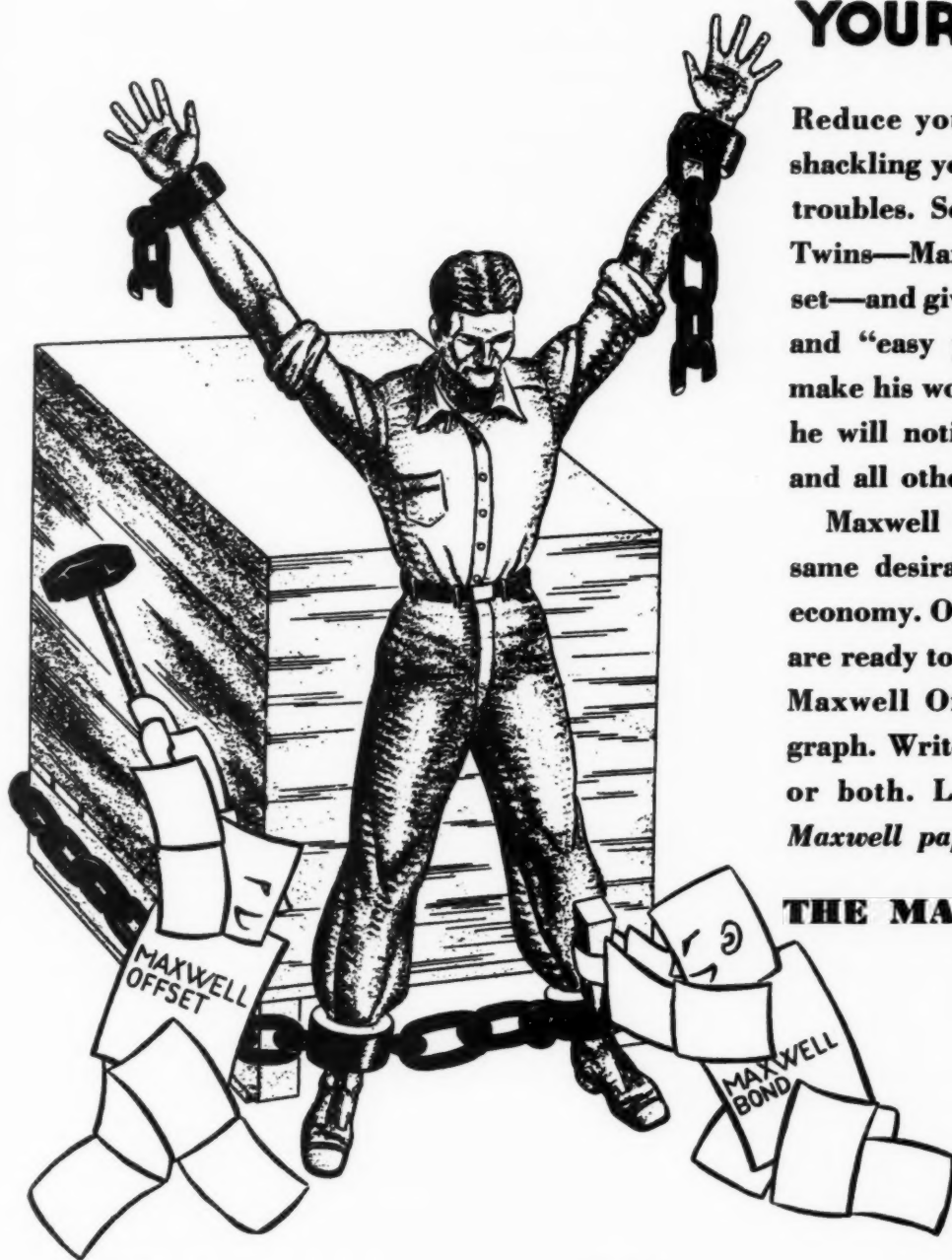
UNSHACKLE

YOUR PRESSMAN

Reduce your production costs by unshackling your pressman from his paper troubles. See that he uses the Maxwell Twins—Maxwell Bond and Maxwell Offset—and give him the advantages of firm and “easy printing” surfaces that will make his work sparkle. At the same time he will notice the absence of curl, lint and all other paper troubles.

Maxwell Mimeograph also has these same desirable features of quality and economy. Over one hundred distributors are ready to serve you on Maxwell Bond, Maxwell Offset and Maxwell Mimeograph. Write for portfolios, tests sheets, or both. Let your pressman decide. *Maxwell papers lie flat.*

**THE MAXWELL PAPER CO.
FRANKLIN, OHIO**



Maxwell Bond
WATERMARKED



Maxwell Offset
TUB-SIZED

MAXWELL IS MADE WELL

Three Experts Compare Notes

**"To Go Offset or Not?"—That Is the Question
Aired in This Symposium Analyzing Pertinent
Phases of the Problem Facing Printers**

THE question of letterpress printers entering the lithographic field is considered of such broad interest by the Miehle Printing Press and Manufacturing Company that that organization has just published an interesting symposium on the subject, in the form of a booklet containing reprints of three important discussions on this subject.

The contributors are B. D. Stevens, Miehle vice-president, who delivered an address, "Should the Typographic Printer Install Offset Presses?"; John H. Millar, author of "Pitfalls of Planography Described by Typographic Printer"; and "Should a Printer Install Offset Equipment?" by Walter E. Soderstrom, executive secretary of the National Association of Photo-Lithographers.

Mr. Stevens points out that "there is hardly enough in common between typographic printing and offset printing so that they could be called second cousins". About the only thing they have in common, he states, is that they are both processes of 'depositing ink on paper, and about the only experience that either type of printer would have that would be in any way useful to him in connection with the other process, is his ability to judge the final results, that is, the effects or quality of the final printed job. He goes on to say:

"Therefore, the first things that a typographic printer should decide upon, in considering the installation of offset presses, are, first, does he wish to go into an entirely new line of business, and second, is there sufficient work, adapted to offset, in the field he wishes to cover to warrant the investment?

Basis for Action

"Frequently a typographic printer will feel that he should go into offset because he is losing business to offset printers, but here again let him consider well whether it is because of the particular process that is being used or whether it is salesmanship, unnecessarily high cost because of obsolete equipment, or some other factors which are the cause of his losing business. After he has determined that in order to protect his business or to enlarge his scope, he should go into offset, there are still many things to be considered in order that he may start right. He should at once get rid of any idea that by buying an offset press and perhaps hiring a skillful offset pressman, he is really in the offset business. In practically every case I know of where a typographic printer has started in this way, he has had at least a year or two of grief and has sustained heavy loss until finally he has learned that he is really in a new business and has built up an organization from the estimating, selling, and operating standpoints which is entirely different from his organization for handling typographic printing.

"True, after some years of experience, he may find that the two branches of his business can be merged in certain respects; possibly some of his salesmen can sell both typographic and offset printing; possibly the estimators will eventually learn to estimate both kinds of printing, but rarely if ever, will the same operating force be found efficient in both. Often the same general superintendent may be used, but in the plant operations, the departments should be kept entirely separate. There may be a good typographic pressman and a good offset pressman in the same person, but I am much like the farmer when he saw his first giraffe, I just think 'there aint no sech animal.'

"The techniques of typographic and lithographic printing, properly practiced, call for very special skill and knack which is to be acquired only at the cost of years of training. In view of this fact, it would appear that it would be unwise for a printer, trained in either method, to take up the practice of the other *lightly*."

Chief Facts Enumerated

After a complete analysis of all phases of the subject Mr. Stevens lists his conclusions as follows:

"1. Is offset printing encroaching upon the domain of letterpress to such an extent as seriously to endanger the future of the latter? I have stated facts and statistics which show that it is not, although if offset had not been discovered, no doubt the growth of typography would have been greater.

"2. Can letterpress printing generally be replaced by offset? In other words: Will the average buyer of letterpress printing be willing, without question, to accept offset in its place? It cannot. The buyer of printing will continue to buy where he can get satisfactory quality for the least cost.

"3. Can work be produced by offset at a lower cost than by letterpress? This depends on the nature of the job. If we eliminate newspapers and periodicals, the jobs as to cost would be divided, and herein lies the principal advantage of a printer having both typographic and offset departments; he can figure the job for whichever department seems best adapted.

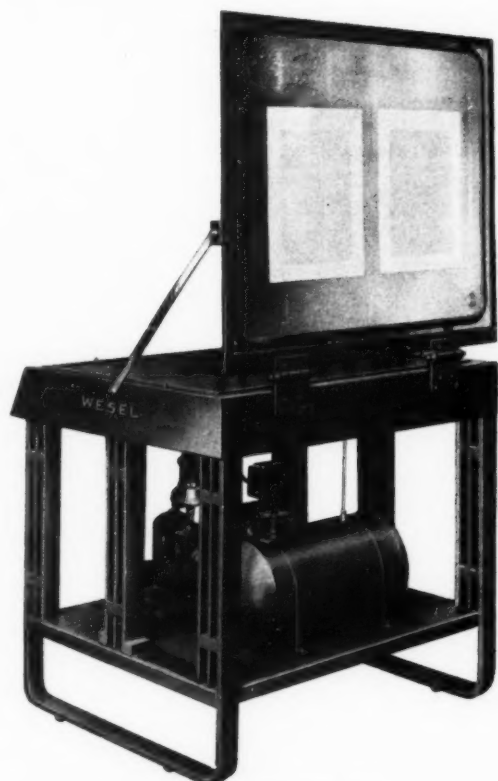
"Therefore, it would appear that letterpress printers should go into offset only where they have a legitimate demand and where they have considered the move fully from every angle."

Mr. Millar's contribution resolves itself into a case history of his own experiences as a letterpress printer who installed offset equipment. He lists ten different pitfalls with which

(continued on page 68)

WESEL PATENTED VACUUM PRINTING FRAMES

Makers of complete line of photo-lithographic plate-making equipment. Over 75 plants Wesel equipped during the past two years.



Open View of Wesel Vacuum Printing Frame



Closed View of Wesel Vacuum Printing Frame

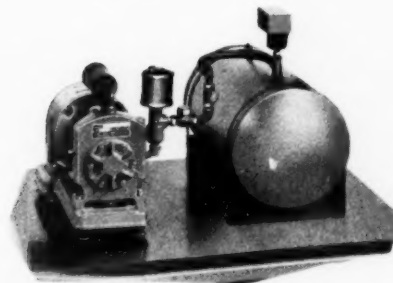
THE Wesel Printing Frame delivers contact between negatives and sensitized material in approximately two seconds and without the use of hooks, clamps, or fastenings of any kind. The new vacuum reserve tank is automatically exhausted of its air content, thus upon opening vacuum valve, the air is instantly exhausted from blanket to vacuum reserve tank.

When the pressure reaches the minimum point, the vacuum control mechanism automatically starts vacuum pump and motor, thus again exhausting the air content of the reserve tank. The operator turns on the electric power in the morning and the machine operates automatically during the day without further attention to the power plant.

Illustrations indicate the method of construction and operation. The entire mechanism is contained within one integral unit, easily moved about the plant to suit the operator's requirements.

Another new feature is the use of a special new "quartz crystal" glass, developed in Wesel laboratories. Under test, this affords 25% faster exposure. It is not ordinary plate glass, but is free of all foreign substances such as iron and other oxides, which otherwise have a tendency to retard light action and create distortion.

Motor and pump are built into one integral unit on a single metal base. This base is supported by a series of compression springs, eliminating all noise and vibration. Entire unit is all metal construction; made in 24 x 30" and 30 x 42" sizes. It is convenient and accurate for all kinds of intricate printing of single and multi-register work.



Power Unit for Wesel Vacuum Printing Frame

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SENEFELDER'S OWN STORY

Lithography's Inventor Set Down This
Dramatic Resume of His Creation of a
New Art and Its Rapid Growth

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As my father, Peter Senefelder of Königshofen in Franken, was court actor in Munich, I had ample opportunity in early youth to see and read many theatrical pieces. Thus I developed such a love for this branch of literature and for the theatre that I would have become an actor myself had I been permitted to obey my inclination. But my father, who was determined not to permit any of his children to choose the stage, compelled me to study law. I could satisfy my longings only occasionally by playing a few times in private theatricals and by venturing on a few dramatic writings in my hours of recreation. In my eighteenth year (1789) the question arose, at a gathering of youngsters, as to how we should entertain ourselves in the approaching Carnival time. We decided to give a little private play.

Many pieces were proposed, but none seemed suitable, because each one wished to play a good and suitable part, and, besides, we could not fill most of the parts, as we lacked women. We were almost giving up hope when Herr Kuerzinger, now court actor, proposed to me to write a play, as I had begun one shortly before that happened to suit each of my friends.

I finished the little piece, *Die Mädchen Kenner*, in a short time. It was ready for production, when through accident we were disappointed about securing the private theatre on which we had counted. We were emboldened to request leave to produce it in the Kurfürst's Court Theatre and succeeded, thanks to my father's aid. The over-kind praise which it won encouraged me to have the play printed. Although I was pretty generous with free copies among my friends, I received so much from Lentner, the book-dealer in Munich, that a net profit of fifty gulden remained to me.

I had not worked eight days on the little thing, and had made all this money, without counting the pleasure of the work. No wonder that now I feared no longer for my future! My love for the theatre became overpowering, and as my father died soon afterward (1791), and I found no further assistance toward completing my studies in Ingolstadt, I resolved to become a dramatic author and actor.

Favoritism Unpopular

I found no place for me in the Court Theatre. Its leaders were opposed to my family, because my mother with her large family received a larger pension, through the favor of the Kurfürst, than she could have expected in ordinary course. In a few strolling theatres, such as Regensburg, Nürnberg, Erlangen, and Augsburg, where I endured privation and misfortune enough, my enthusiasm was well dampened in the course of two years. I decided, as I could see no other prospects for the moment despite my not inconsiderable attainments, to support myself in future as author.

I had written several dramatic pieces already that had won sufficient applause. Therefore I decided to have some of these printed in order to meet my immediate expenses. I gave one of them to the printing establishment of Herr Hübschmann, in Munich, and when the first folio was finished, I made the proposition to Herr Lentner to take some or all of the copies. He told me that I would have done better to let him have the manuscript; but since it had been begun, he told me to make sure that it be finished before the beginning of the Leipsic Easter Fair, in which case he promised to obtain for me one hundred gulden net, after deducting all

costs. I begged Herr Hübschmann to finish the printing, but, as he assured me that it was impossible, I took the remaining folios to another printer. Despite this the play was not printed till two weeks after the fair, and I received from Herr Lentner barely enough to pay the printing cost.

My hope of profit was lost. I had, however, seen the entire procedure of printing, because I had spent many a day in the establishments. I found that it would not be hard for me to learn, and could not withstand the desire to own a small printing establishment myself. "Thus," thought I, "I can print my productions myself, and so alternate healthfully between mental and physical activities." I could earn a decent living, too, and thus become an independent man.

This idea controlled me so that I studied all sorts of ways to realize it. If I had possessed the necessary money, I would have bought types, a press and paper, and printing on stone probably would not have been invented so soon. The lack of funds, however, forced me to other expedients. At first I thought of etching letters in steel. These matrices I planned then to impress on pear wood, in which the letters would show in relief, somewhat like the cast type of the book printers, and they could have been printed like a wood-cut. A few experiments showed me the possibility of this, and I could easily have invented a machine with which the moulding could have been done more quickly than a printer could set his type. I reserve the right to use this possibly fruitful idea in future with improvements. At the time, however, I had to give up the whole thing through lack of implements and sufficient skill in engraving.

An Inspiration Takes Hold

Then it struck me that if I had only enough types to set one column or folio, I could press this into a soft material, transfer the impression to a board covered with soft sealing-wax, and reproduce the relief plate thus obtained in stereotype form. The attempt succeeded perfectly. I made a sort of dough of clay, fine sand, flour, and coal-dust, which being firmly kneaded, took the impression very well, and was so dry in a quarter of an hour that I could print warmed sealing-wax thoroughly well with a small press. I inked these letters of sealing-wax relief with printing-ink laid on with a leather roller stuffed with horse-hair and obtained a result as clean as any obtained from ordinary types. By mixing finely powdered gypsum with the sealing-wax I made the latter harder than the ordinary type composition. Thus there was nothing in the way of my making stereotype plates (which I did not know by this name at that time), except a few minor appliances and a small stock of types. But even this exceeded my financial power and I gave up the plan, especially as I had conceived a new one during my experiments.

This was to learn to write out ordinary type letters exactly, but reversed. I planned that as soon as I attained the skill, I would write them with an elastic steel pen on a copper plate covered in ordinary manner with etching surface, etch, and let the copper-plate printers print them. In a few days I had such skill in reverse writing that I attacked the etching on copper bravely. Here, to be sure, I met greater difficulties. Writing on copper over the etching surface was far more difficult than writing on paper. Then the preparation of the plate, the etching, etc., demanded some prac-

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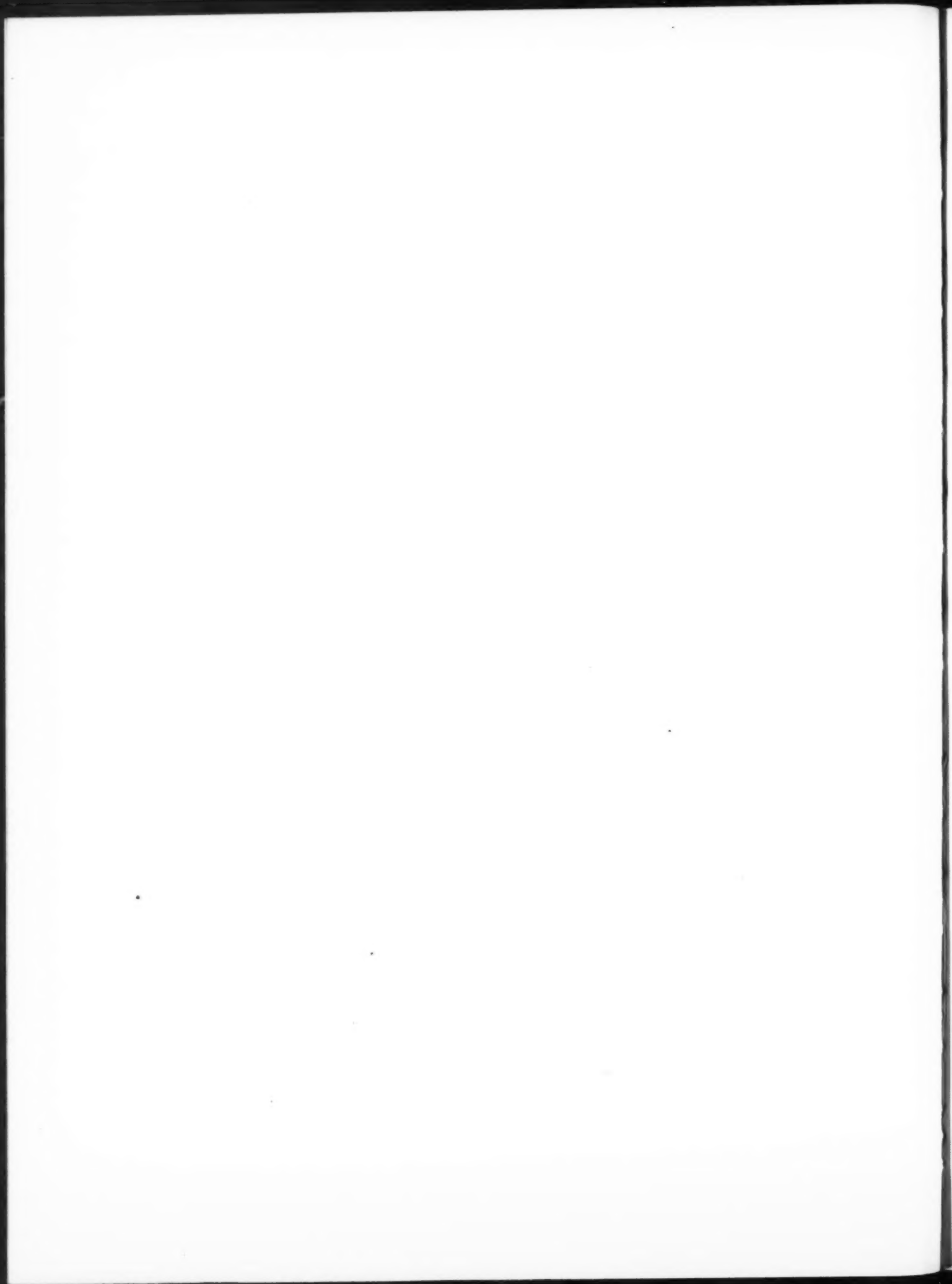


Lithographed on the Rutherford High-Speed Offset Job Press

Photograph by Steichen courtesy the J. Walter Thompson Co.

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time; but all this I hoped to conquer in time. The one thing that troubled me was that I could not correct the errors made during writing. The accessories of copper-plate engravers, especially the so-called cover varnish, were quite unknown to me. I knew no remedy except to paint the faulty places over with molten wax, but the covering generally became so thick that I could not work through it properly and had to leave the corrections for the graving stilus, which, however, I could not handle at the time.

Chemical Knowledge Helps

As, however, the proofs were thoroughly satisfactory to me, I labored desperately to overcome the difficulty. During my student years I had attained much chemical knowledge, and I knew that most of the resinous products which withstand acid, as well as the fats, wax, tallow, and so forth, can be dissolved and diluted partly in etheric oils and spirits of wine, and partly in alkalis. My problem was to obtain a thin mass which would permit itself to be spread very thinly in cold condition over the copper etching surface, dry quickly, become sufficiently firm after drying without getting tough, and, above all, be something that would not attack the etching surface. A few trials with spirits of wine and various resinous forms gave no satisfaction. The one experiment that I made with oil of turpentine and wax also failed, presumably because I diluted the mixture more than necessary, which caused it to flow too much and dissolve the etching surface, at which time several well-done parts of the engraving were ruined. Besides, this mixture dried only slowly to the degree necessary for working. Fortunately I made no further experiments with this material, because then I should not have invented stone-printing, as I know now how to make a cover varnish that is quite satisfactory.

Experiments Successful

I turned, instead, to an experiment with wax and soap, which succeeded beyond all expectations. A mixture of three parts of wax with one part of common tallow soap, melted over the fire, mixed with some fine lamp-black, and then dissolved in rainwater, gave me a sort of black ink with which I could correct faulty spots most easily.

Now I needed only practice in order to carry out my project of etching my literary productions in copper. This presented a new difficulty. After I had written on my single little copper plate, etched it, and pulled proofs at the house of a friend who possessed a copper-plate press, I had to spend some hours again laboriously grinding and polishing the plate, a process which also wore away the copper fast.

This led me to practice on zinc, which was easier to scrape and polish. An old zinc plate of my mother's was requisitioned at once, but the results were very unsatisfactory, because the zinc probably was mixed with lead, and I had used only aqua fortis instead of more powerful acid.

I did not continue trials with zinc, because just then I obtained a handsome piece of Kellheimer stone for the purpose of rubbing down my colors on it; and it occurred to me that if I painted this stone plate with my wax ink, it would serve as well for practicing as copper or zinc, with very little labor in grinding and polishing. The experiments succeeded, and though I had not thought originally that the stone itself might be used for printing (the samples I had seen hitherto of this Kellheim limestone were too thin to withstand the pressure exerted in printing), I soon began to believe that it was possible. It was much easier to do good work on the stone than on the copper. I observed also that I needed weaker and much diluted aqua fortis.

Possibilities of Stone

A stone mason told me that he could provide me with this sort of limestone in plates from one inch to eight inches thick. Thus I needed not to fear cracking of the stone; and the only thing that I needed to invent, in order to use the stone just like copper, was either a way to give the stone

a better polish, or else a tint which would be easier to rub away than the ordinary copper-plate printing-ink. The stone will not take the polish that is demanded with ordinary printer's ink, — and perhaps this is the reason why the stone has not been used long before my time as substitute for copper, for I imagine that such attempts must have been made.

I tried all possible kinds of polishing and grinding without attaining my purpose completely. The result was best when I poured a mixture of one part of concentrated oil of vitriol and four or five parts of water over the stone after polishing it. This mixture, which is very sharp, has the property of boiling immediately when poured over the stone, but ceasing instantly, so that one is tempted to believe that the vitriol has sated itself and lost its power. This is not so, however; for the same fluid, placed on an untouched part of the stone, boils again at once. The reason is that a firm skin of gypsum forms at once on the stone, and this remains impervious to the fluid. If now the etching fluid is poured off and the stone is rubbed lightly with a rag, it attains a shining polish. Unfortunately this is so thin and weak that one can make barely fifty impressions without repeating the process, which involves some loss to the drawing. But if one desires to print in the present chemical style, that is, wet, and the stone is polished before the drawing, one can make several thousand imprints, which will be described in the proper place.

All experiments to find a color easy to wipe away showed me that on a stone prepared with oil of vitriol none was better than a light oil varnish with fine Frankfurter black and some tartar. This mixture could be washed off with a weak solution in spring water of potash and common salt. However, it happened often that slight carelessness in washing destroyed designed parts which took color again afterward only after much trouble. Recollection of this occurrence, which I could not understand clearly at the time, led me some years later to the invention of the chemical stone-printing of to-day.

I have told all these things fully in order to prove to the reader that I did not invent stone-printing through lucky accident, but that I arrived at it by a way pointed out by industrious thought. It will be seen that I knew the ink, before I thought of its use on stone. The stone I used at first only to practice writing. The ease of writing on stone lured me then to try to make it available for direct printing. To do this, I had to discover a way to rub away the black as completely from all unetched parts of the stone as the copper-plate printer can do it from his surface, in comparison with which the stone was but slightly smooth.

Studied Polishing Problem

At this time my further experiments with this etched form of stone-printing were entirely checked by a new, accidental discovery. Until now I had invented little that was new, but simply had applied the copper-plate etching method to stone. But this new discovery founded an entirely new form of printing, which basically became the foundation of all succeeding methods.

Had the stone merely proved available as substitute for copper, I would have returned to copper as soon as I could afford it, despite several advantages of stone, and for the following reasons: first, the necessary weight and thickness of the stones; second, because the printing process was slower than with copper; third, because probably I never would have become sufficiently skilled in the difficult manipulation of washing off; but chiefly, because the necessary spur, the originality of the discovery, would have been lacking, since I remembered that as a child of five or six I had seen a music-printery in Frankfurt or Mainz where the notes were etched in black slate-stone. I had played often with the broken stones, which lay in a heap near our house. Enough, I was not the first discoverer of stone-etching, nor of stone-printing; and only after I made this new discovery which I will describe now, which led me from the engraved to the relief process, with my new ink, might I call myself the inventor of an art.

At that time I could not guess that I was to invent a form of printing dif-

ferent even from this new and original form, a method which was to be based not on mechanical but purely chemical properties. Even this method, new in 1796, still was purely mechanical in its purpose, whereas the present printing method, which I began in 1799, may be called purely chemical.

I had just ground a stone plate smooth in order to treat it with etching fluid and to pursue on it my practice in reverse writing, when my mother asked me to write a laundry list for her. The laundress was waiting, but we could find no paper. My own supply had been used up by pulling proofs. Even the writing-ink was dried up. Without bothering to look for writing materials, I wrote the list hastily on the clean stone, with my prepared stone ink of wax, soap, and lampblack, intending to copy it as soon as paper was supplied.

New Discovery Is Noted

As I was preparing afterward to wash the writing from the stone, I became curious to see what would happen with writing made thus of prepared ink, if the stone were now etched with aqua fortis. I thought that possibly the letters would be left in relief and admit of being inked and printed like book-types or wood-cuts. My experience in etching, which had showed me that the fluid acted in all directions, did not encourage me to hope that the writing would be left in much relief. But the work was coarse, and therefore not so likely to be under-cut as ordinary work, so I made the trial. I poured a mixture of one part aqua fortis and ten parts of water over the plate and let it stand two inches deep for about five minutes. Then I examined the result and found the writing about one tenth of a line or the thickness of a playing-card in relief.

A few finer strokes had been injured slightly, but the others had hardly lost breadth noticeably and not at all in depth, so that I had good reason to hope that a well-written plate, particularly in type letter, would be susceptible of much better relief.

Eagerly I began inking in. I used a fine leather ball, stuffed with horse-hair, and inked it very gently with thick linseed oil varnish and lampblack. I patted the inscription many times with this ball. The letters all took the color well, but it also went into all spaces greater than half a line. That this was due to the over-great elasticity of the ball was clear to me. So I cleansed my plate with soap and water, made the leather tense, and used less color. Now I found color only in such spaces as were two or more lines apart.

I saw that I could attain my purpose better with a dauber of stiffer material. I tried at once with a piece of glass from a broken mirror, and as this succeeded fairly well, I tried elastic metal plates. Finally I made an entirely satisfactory appliance out of a thin board, very smoothly planed and covered with a fine cloth.

My further experiments with this relief plate succeeded far better than my previous ones with etched letters. The inking in was much easier, and hardly one quarter of the force was necessary for making impressions. Thus the stones were not so liable to crack, and, what was the most important for me, this method of printing was entirely new, and I might hope to obtain a franchise and even financial aid. This hope grew when I learned that Riegel of Munich, who had invented a new sort of Frankfurter black, had received ten thousand gulden to erect a factory, although no human being could use it as a sufficient substitute, as I proved by many trials. I saw the great field for my stone-printing art and did not doubt that I would obtain assistance, even should it be only a twentieth part of what Herr Riegel had received for his entirely worthless process.

The new art was invented, and soon was sufficiently practised; but again came the need for a little capital, to buy a press, some stones, paper, tools, and so forth. If I did not wish to give up my hopes again, I must seek some way to obtain the necessary means. All my endeavors were fruitless. Only one way showed itself. An acquaintance, who served in the artillery, had offered to pay two hundred gulden for a substitute. In my

helplessness I offered myself. I thought: "Once you are in the artillery and have mastered the exercises, you can get furlough and the permission to do your printing. You can pay others to do your sentry goes, and thus there will be only a few weeks a year in which the regiment will demand your presence. As soon as you have earned a few hundred gulden you can get a substitute yourself, or, at worst — how soon six years will pass! Perhaps you can make your fortune in the artillery, too! You will display zeal, and your knowledge is such that probably few in the corps will be superior to you. Mathematics, and especially mechanics and geography, were ever your favorite studies; you were one of the first of the Munich Lyceum in these branches; therefore it is certain that you will be noticed and promoted" — and other such chimerical hopes.

On the third day I went with a transport of recruits to Ingolstadt, which then was the quarters of the Bavarian artillery. I entered that city with feelings different from those with which I had left it as Academician. But the thought of my invention elevated my spirit to a certain dignity and comforted me with the prophecy of a better future. I was presented to the chief of company and slept a night in the barracks, where unpleasant remarks and the conduct of a vulgar corporal cast heavy shadows over the coming soldiering. Next morning, when I was to be enrolled and named Prague as my birth-place, I was informed that a recent royal order shut out all foreigners from the Bavarian service. So I started on my return, poorer by a hope, but not in entire despair. As I looked down from the Danube bridge into the majestic stream, where as a student I was nearly drowned once, I could not quite prevent the thought that my rescue at that time had not been fortunate, since a too unkind fate seemed to deny me even the one means of support, open to the most helpless, that of the army.

Still, though cheated by hope a thousand times, I ever followed her lures again, and a new plan instantly formed itself to replace the one that had just gone to wreck. I decided to give up my literary work for the time being and work as a printer for wages.

Commercial Side Revealed

Some very badly printed music that I bought in Ingolstadt awakened the idea that with my new printing process I could furnish much better work. I decided to go at once to Herr Falter, the music-dealer of Munich, to interest him in my invention and obtain a small advance of money. Had I done this, my art might have been more thoroughly perfected long ago; but, again, it might never have been developed as it has been, for it was amply sufficient already for music-printing. My shyness, however, prevented me from addressing Herr Falter. Twice I was at his door, and each time I retreated. The second time I met a good acquaintance, a musician named Schrott. In reply to my inquiry if he knew Herr Falter, he said "No," but he told me that the court musician, Gleissner, had paid recently to have several masses printed and intended to publish some more church music soon. Who was happier than I over this news!

Herr Gleissner was a good friend of old. While I was in the theatre I had engaged him to compose several songs, and had found him a humane and righteous man. Within half an hour I was in his house and explaining my invention to his wife, he being absent. I aroused her interest so much that she seemed thoroughly eager to have me hurry back with a little press model, in order to show them both the working of the process.

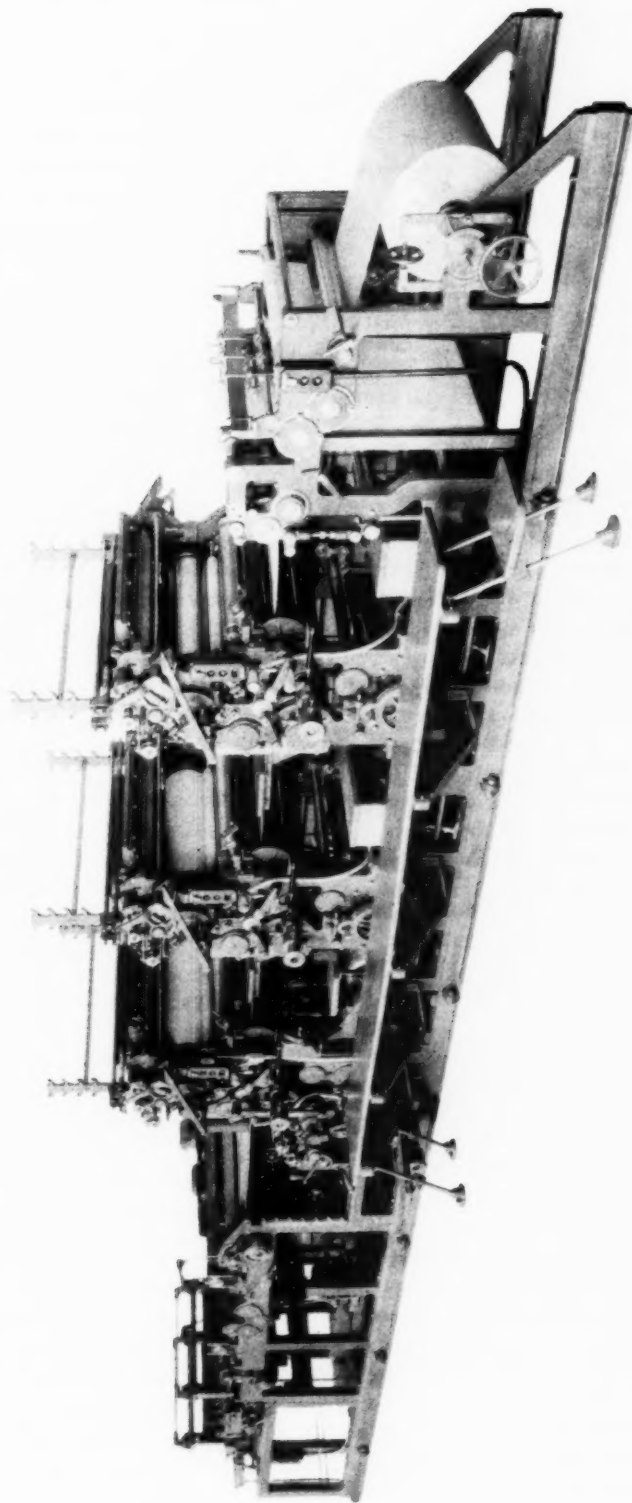
The entire behavior of the woman was so open and artless that I dismissed my first thought, "I might be cheated out of my invention," and hurried to Herr Gleissner in the afternoon with my simple apparatus.

My printing succeeded absolutely. Gleissner marveled at the swiftness and beauty of the impressions, and, knowing my penniless condition, he offered of his own free will to pay for a small printery.

My mother had given me a press already. It was the ordinary copper-plate press with two cylinders. True, it was very roughly made, being a house carpenter's work, but it had cost only six gulden. However, one



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could make very pretty impressions from stone with it. To spare Herr Gleissner's treasury, I contented myself with it for the time. I bought a small stock of stones, paper, and other necessary articles.

Herr Gleissner composed twelve songs with clavier accompaniment. I wrote them rapidly on stone and made one hundred and twenty impressions with the aid of a day laborer. Everything, composition, writing on stone and printing, was finished in fourteen days. From Herr Falter, who bought one hundred copies, Herr Gleissner received the sum of one hundred gulden. Stones, which could be used over and over again, paper, color, and wages had cost barely thirty gulden; thus we had a clear profit of seventy gulden, earned in fourteen days, and I gained so much happy hope that I thought myself richer than Croesus.

We were gay and merry. Through his patron, Count von Törring, then President of the Royal Chamber, Herr Gleissner had presented an impression of our first work to the Kurfürst Karl Theodor, and had received one hundred gulden out of the Cabinet Treasury, with the promise of a franchise.

A succeeding little piece of work, "Duets for Two Flutes, by Gleissner," brought forty gulden more into our chest, and finally our finances, as well as a bright success for our institution, seemed assured by a contract closed with the Countess von Herting to print a cantata on the death of Mozart by Cannabich, the musical director, which promised us a profit of one hundred and fifty gulden for two or three weeks' work.

During this time I had presented specimens of work to the Royal Academy of Sciences, with a description of the advantages of the art, in which I named particularly the cheapness, and said that the impression had been made on a press costing not more than six gulden. To my amazement, instead of the expected honorable mention, I received a sum of twelve gulden from the vice-president of the Academy, Herr von Vachieri, with the information that the members had voted favorably for my invention, and that, as my expenses amounted to only six gulden, according to my own statement, I would, no doubt, be satisfied with a sum double this. I had expected an entirely different appreciation from the sentinels of the arts and sciences, whose office was to test the value of this new discovery and call the Government's attention to it if favorable. A mere monetary reward, therefore, especially so small a one, could not possibly give me much pleasure.

No Path of Roses

Promising as our beginning was (1793), there came a sad period soon enough for the art, for me, and also for Herr Gleissner. We had ordered a new press as soon as our income permitted. I expected to produce a masterpiece with the first impression. Instead of that, there appeared the very opposite, a dirty and smeared imprint. We suspected that we had made some mistake in method. The second attempt, however, was worse than the first, if possible. To be brief, of twenty trials, made with the greatest industry and toil, we obtained only two or three that were even average.

As long as I live I shall be unable to understand how we could have been so blind at that time. We sought the cause of failure in everything except the true thing, — an alteration that made the new press different from the old one, which unfortunately had been already destroyed. Later, after I had invented the so-called lever or gallows press, the thing was clear to me at once. But by that time it had cost me and Herr Gleissner two years full of toil, worry, and sorrow. In the contract with the Countess von Herting the date of completion of the work had been stipulated, because she wished to surprise Herr Cannabich with it on his birthday. We had barely four weeks left and not a single sheet had been finished. With press alterations, trial impressions, and so forth, we had wasted money and time, and paper by the ream. Our loss amounted to more than one hundred and fifty gulden, and still there was no prospect of final success. Pressed for results by the Countess, our entire reputation and the honor of my invention were at stake. Added to this came many other annoyances, especially the com-

plaints of Frau Gleissner, who charged that I had destroyed the original, perfectly satisfactory press against her will. These tested my courage sadly.

The cause of all this trouble was so petty that I really must have been half-stupefied by the fear of not keeping our pledges, otherwise I must have perceived it at once.

To make my first imperfect press I had bought a piece of wood from a wheelwright in order to have it turned into two cylinders. Hardly had the two been in the house a day before each one split so that a longitudinal crack of two inches width appeared. As the upper cylinder was thick enough to make an impression of a whole folio of sheet music without revolving so far as to let the crack reach the stone, I contented myself with it temporarily. Now, in order not to spoil the impressions, I had to begin each revolution of the cylinder at the crack, for otherwise the crack might have come at the middle or end of the impression and given no imprint of that part. Therefore, as the stone was pushed under the cylinder at the crack, it was already gripped before the impression began, and was drawn through at once. With the new press, however, the upper cylinder had to draw the stone between both cylinders in order to bring it under its pressure. But in doing this, the new press first pulled the linen stretched over the printing-frame till it would yield no more and forced the stone powerfully under the cylinder, during which of course the paper under the linen was pulled over the inked stone and smeared.

Several attempts to rectify this trouble were unsuccessful. Probably I would have discovered the remedy finally, — either that the upper cylinder must not first be pressed on the stone, which must be under it before each impression began, or that I need only use tightly stretched leather instead of linen. But I decided, instead, in order to complete our work if possible, to have a press made in all haste by a carpenter, of a style like the book-printers' press, wherein the force is applied instantly from above.

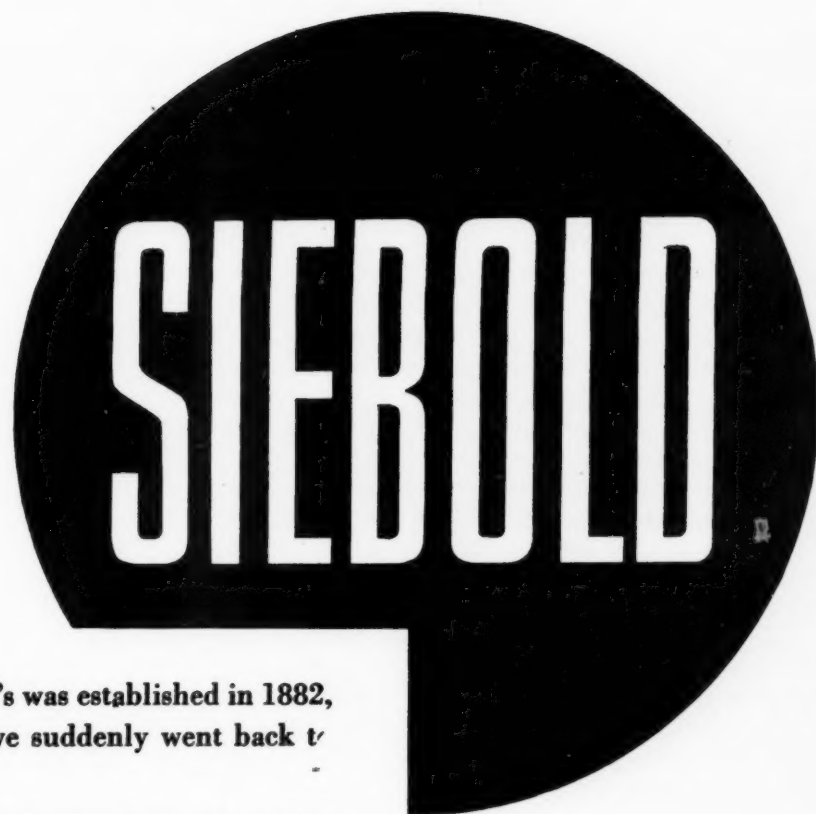
As everything was very rough, the new press was ready in eight days. The first experiment, with a small stone, seemed to succeed. But the larger stones would not give thorough impressions, probably because of the uneven surface of the press, which was merely of wood. I increased the power enormously. A stone of three hundredweight was elevated with pulleys and released suddenly to fall ten feet. It forced a lever down on the press with a pressure of more than ten thousand pounds. The plates gave fair impressions by this means, but generally they were cracked after the first, second, or third impression.

To determine how much downward force was needed to print a sheet of music, I took a well-ground stone a square inch in area, laid moistened paper on an inked printing-stone, over this a sixfold layer of paper, then a double layer of fine cloth, finally the square inch of stone, and then weights ranging from one to three hundredweight.

This experience taught me that the square inch of surface demanded three hundredweights of force to make a good impression in a few seconds, and almost less than half that weight when I allowed it to act for a whole minute. According to this calculation the entire sheet, which contained about one hundred square inches, would have demanded thirty thousand pounds; and the stone could have withstood this without cracking, had I been able to apply the pressure evenly. But the imperfections of the press made it necessary to apply a pressure three times as great, and this the stones could not bear.

To correct the defects of this press was more than I cared about, after I was nearly killed by the three hundredweights, which fell accidentally, and, as I stood immediately under it, would have beaten out my brains had not a miracle caused the load to catch and hold. The thought that a similar accident might cause the death of one of my men made me hate the whole press, all the more so as I had conceived what seemed to me at the time an exceedingly happy idea for a very simple and not costly printing-machine.

**A LOT CAN HAPPEN IN
FIFTY THREE YEARS**



The world has changed so much since Siebold's was established in 1882, that none of us would know how to act if we suddenly went back to those days.

But some things never change. 53 years of experience in serving the lithographic industry have not altered our original principle of offering the highest quality and finest service to every customer.

Every ink, every lithographic product we handle is backed by our own reputation. Offset Black, which has for 30 years been regarded as more or less of a problem, is no problem to us. We will gladly have our representative call and give you full details on the various Blacks we manufacture.

*Supply price list and Offset
Specimen Book upon request*

Siebold's roller department is fully equipped to supply your wants such as Smooth and Grain Leather Rollers, Moleton, and Muslin Covers, also full selection of Hand Rollers, both Rubber and Leather for transferers and prover's use. These are of our own manufacture and our 53 year old reputation is back of every one.

J. H. & G. B. SIEBOLD, INC.

Lithographer's Supplies

47 WATTS STREET, NEW YORK, N. Y.

Phone WAlker 5-9474

OFFSET BLACKS • COLORS • SAFETY INKS • ROLLERS • MOLLETON • DAMPER COVERS • RUBBER BLANKETS

Photo Lithographic Varnishes

BY GEORGE CRAMER
Sinclair & Valentine Co.

THE binding materials used in making inks in the early Egyptian and Chinese times were far different from those now being employed in the present photo-lithographic processes. These early printers were confronted with problems not experienced today, when, in order to make their efforts in the graphic arts hold together, they found it necessary to work up their own vehicles and binders. The Egyptians at one time extensively used various clays and limes as binders. The Chinese are credited with having developed an adhesive of an organic nature. Many kinds of glues and pastes were developed from hides, eggs, bones and cereals. These were compounded in great secrecy and used as the binding mediums of ancient Chinese inks. With the introduction of printing from movable type by Gutenberg in the 15th century also came the use of linseed oil as the binding medium for the inks used on these presses. The earlier varnishes were nothing more than heat-treated linseed oils, the heat treatment being continued until such time as the required or chosen body had been obtained. These oils were generally dark in color and possessed such other properties as would make them unsuitable for present high-speed production methods.

An era of slipshod printing and varnish making followed the initial efforts of the pioneer artisan. It was during this time that many resinous materials were incorporated in the varnish making processes due, largely, to their decreased cost and ease of handling. Some of these ingredients still find application in certain vehicles. Many other cheaper materials; such as, tars pitches, gums, etc., have been added since that time. None of these, however, have found their way into lithographic varnish.

Linseed Basic Material

Lithographic varnishes, as they are found in their present stage of development, are all basically produced from linseed oil. The ripened flaxseed is carefully freed from dirt, dust and foreign seeds before being aged prior to processing. This aging of the flaxseeds seems to affect the quality of the oil extracted. After a storage period of several months the seeds are crushed and ground into a fine meal. This meal is tempered slightly and then heated to about 100° F. in a large mixing vat. Weighed quantities of this meal are placed in shallow containers lined with thick camel's hair cloths. The meal is finally entirely enclosed in these cloths and is placed on trays that fit into the giant hydraulic presses. Pressure is applied in two stages. The first stage is of a relatively low pressure for several minutes. The second stage consists of very high pressures and expels all but a few percent of the original oil in the seed. The expelled oil is allowed to settle and then filtered to remove the small percentage of seed pulp that is forced through the camel's hair

cloths. The oil thus treated is raw linseed oil. Further treatment; such as, alkali and acid refining, as well as bleaching, make the so-called refined oils. These oils form the basis for either the regular or the transparent lithographic varnishes.

The heat treatment of either the refined or the raw linseed oil is conducted in iron, copper, monel metal or stainless steel kettles. The capacity of these kettles varies from 50 gallons to 1000 gallons. They are fired either with wood, coal or coke, fuel oil or even electrically. Each variety of kettle and system of firing has its own special advantage; such as, color, acid number, etc.

Temperature Changes

The kettle is charged with the oil to be boiled to within one-half to two-thirds of its capacity. It is essential to allow space for the heading (or foaming) of the oil, also for its expansion, due to the temperature change. The temperature of the oil is gradually increased until it reaches 575° to 600° F. by any one of the aforementioned heating systems. These heats are maintained until the proper body is reached. For the light bodied oil a relatively short time is required. The heavier the body, the longer the time of the boiling. Very heavy oils; such as, numbers 7 or 8 may require 18 hours or more. The time required to reach a certain body will vary with the oil. Usually oils with high iodine numbers (power of oxygen absorption) will body faster than those having lower iodine numbers. These qualities are dependent upon the grade and location of the growth of the original flaxseed. The North American seed has a good rating; while that of the South American seed is only fair. The oil extracted from Russian seed was at one time considered the best. In cooking an oil every effort is made to preserve the best color and at the same time maintain a low acid number.

Occasionally the old method of igniting the oil when at an elevated temperature is still employed in bodying a lithographic varnish. The dark color and the development of high acid numbers by this process is largely the cause for its replacement by the straight boiling method.

Several other methods of increasing the body of linseed oil for lithographic varnish are used to a limited extent. One such system depends on the blowing of air (or ozone) through a linseed oil. The oxygen in the air is absorbed by the oil and by this reaction develops body. Cooking of oils in the absence of air or even in the presence of inert gases; such as, carbon dioxide or nitrogen, produces bodied oils with special qualities. Oils other than linseed have been tried at times. In the last analysis, however, the regular cooking process using linseed oil has proven to be most satisfactory as well as most economical.

A MESSAGE TO LITHOGRAPHERS WHO WANT MORE SALES---READ



1. How cooperation between lithographers can create new business for all.
2. How one group of lithographers actually carried out a successful joint sales promotion drive.
3. What important buyers said about this campaign.
4. How you can participate in a similar activity in a manner calculated to promote your own best interests and at a cost that is surprisingly low.

**Increase Your Sales
Without Increasing Sales Expense**

A HOPE REALIZED

Most lithographers—probably including yourself—have many times dreamed of a plan whereby they could reach all the buyers in their own trading area effectively and economically. You would no doubt like to tell these buyers your own sales story in your own way—unhurriedly, forcefully, impressively.

You have often hoped you had both the time and opportunity to visit each of these prospective accounts to tell them exactly what your plant could do for them. Until now this has remained simply a hope.

But today, thanks to the actual experience of a group of lithographers who decided to promote their business cooperatively—for the best interests of all—your hope can become a realization. But first read what this group set out to do and what it accomplished.

WHAT ONE GROUP ACTUALLY DID —

Determined to tell their sales story to the greatest market in the world—the Metropolitan New York area—a comparatively small group of lithographers comprising the N. Y. Photo-Lithographers Association launched a cooperative sales campaign. The backbone of this drive was the publication of the "Handbook of Photo-Lithography"—an imposing 160-page book, lithographed entirely in the plants of members, containing actual specimens of work produced by these plants, covering the full lithographic range, from simple black and white line to striking multi-color process work.

RESULTS—

This powerful sales promotion piece was delivered to 3,000 buyers of printing in the Eastern part of the country. The reception accorded this unusual activity and the results achieved can best be told in the words—not of the firms that participated in the campaign—but in the glowing comments expressed by those who received the book—the important buyers to whom the drive was directed. A few of the hundreds of comments received are reproduced on these pages. A considerable volume of new business was realized by the concerns that took part in this campaign.

Read the back page of this folder to learn how YOU can participate in a similar campaign to promote sales in your territory.

WHAT IMPORTANT BUYERS SAID

CREATED NEW BUSINESS

27. "It certainly is a splendid and inspiring piece of work. It came at a time when I was considering photo-lithography, and I am writing to several of your active members today, asking for a quotation on an enlargement of a new catalogue that came off the press today. I appreciate very much receiving this book."

49. "This is a splendid book and has given me, as it must others, a better conception of the possibilities of photo-offset."

38. "We have used very little photo-lithography in the past and your book so aptly illustrates what can be done with it that I believe that if the various members of our production department could thoroughly read these books, and have them for reference, we would be able to switch a lot of our letter press printing to photo-lithography."

Your granting of the two extra volumes is very much appreciated and I assure you the photo-lithography business will have gained quite a bit from your gift."

8. "We received our copy of the 'Handbook of Photo-Lithography', and found it very interesting reading. As a result we sent a small order to one of your members."

10. "Since receiving it and seeing the possibilities with this type of printing, we have sent out for several estimates."

14. "If copies of this book are available I would like to have one, also subsequent literature published by your organization. We have had occasion to use a considerable amount of photo-lithography, hence our interest."

15. "We are at the present time investigating the field of lithography and photo-lithography and would very much appreciate receiving a copy of your 'Handbook of Photo-Lithography' 1935."

19. "We have never as yet used lithography because we cannot get it locally; but we have long been interested in the process and would use this process if we found it to be practical and convenient in spite of our distance from the center of the art."

20. "Recently, I saw the 'Handbook of Photo-Lithography' which seemed to be very useful. I understand you distribute this free and would be glad to have one for my own guidance in ordering photo-lithography work."

21. "We are regarded as the largest users of photo-lithography in this section, most of which is ordered from New York sources. We feel, therefore, that a copy of this book in our files will be of value to your membership."

22. "I have been made the editor of a publication put out by this club and we plan to use photo-lithography for our next issue. Already I have written one of the companies in your 'Handbook' for estimates. It is rather hard for me to explain to the club members what photo-lithography is but I feel that if I had this 'Handbook' they would be all for it. Also there are some swell pointers in it for me. These and other reasons make me very anxious for it."

64. "From the casual glance I have given it, I know that it is going to be very interesting and in all probability helpful in handling some of the advertising matter."

68. "I have given critical inspection to the copy of the 'Handbook of Photo-Lithography' received from you. It simply portrays the cooperative efforts of the leading lithographers hereabouts which should augur well for the good of the industry."

76. "We wish to express our appreciation for the 'Handbook of Photo-Lithography' sent to us some time ago. It is not only interesting but should prove very useful in future work of this type. Mr. F. G. was in the office this morning and saw our copy of the book and expressed a desire to have one. We think it will be worth your while to see that Mr. F. G. is supplied with a copy if you have any left at this date."

98. "It's a fine job, and will probably cause us to consider offset for certain jobs where we never considered using lithography before."

100. "I wish to thank you for sending me the copy of the 'Handbook of Photo-Lithography' which was received a few days ago. Truly this is a most unusual sales promotion piece and it is no wonder that sales have been increased because of it. Many of the pages are really works of art and the entire book is most instructive. It may interest you to know that since receiving the 'Handbook' I have had occasion to show it to several of our members who were most enthusiastic, and I have even had occasion to send some of the descriptive pages to an out-of-town member who had inquired regarding such work. We have given one of your members close to \$1,000.00 for work in the past two months."

115. "We appreciate very much your 'Handbook' recently delivered to this office, and think it is a beautifully gotten up example of such work, and should be helpful to us when planning any advertising in which such work would be advantageous."

74. "We found this book extremely interesting and it gave us some new ideas, which we expect to put through very soon."

81. "The 'Handbook' has proved quite helpful in suggesting additional ways in which photo-lithography might ultimately be used."

83. "May I compliment you on the make-up of this book, and the data contained therein."

88A. "We acknowledge receipt of copy of 'Handbook of Photo-Lithography' which we will find very helpful in connection with certain problems arising in our Advertising and Sales Promotion Departments."

98. "It's a fine job, and will probably cause us to consider offset for certain jobs where we never considered using lithography before."

126. "The writer received a copy of the 'Handbook of Photo-Lithography' and found it not only interesting but instructive. Inasmuch as he took his copy home, if you care to let us have another for the office library, we will be pleased to receive it. For your information, we have specified photo-lithography in one to two jobs which our Agency had in production."

129. "An excellent, comprehensive and well-conceived manual. It has acquainted me with new offset possibilities that will probably result in orders for photo-lithographing."

ABOUT "THE HANDBOOK OF PHOTO-LITHOGRAPHY"*

ADVERTISED THE PROCESS

59. "The '1935 Handbook' is an excellent presentation, convincingly free of exaggeration."
7. "The 'Handbook of Photo-Lithography' which you sent us recently is the best piece of offset literature we have seen. We want to compliment your organization on the publishing of so comprehensive a description of photo-lithography processes."
9. "I consider it an outstanding piece of sales promotion development. I have gone through it myself somewhat hastily because I am hopelessly jammed with work, but I am turning it over to our advertising department for their careful perusal, information and file and I believe it will be a very useful addition to their library."
26. "The idea of putting together in one volume representative samples of the photo-lithographer's art appeals to me as a smart way of promoting the process."
32. "Please accept my rather belated thanks and appreciation for the copy of your excellent 'Handbook of Photo-Lithography' that so completely describes and illustrates the possibilities and scope of photo-lithographic offset printing. It is a book for the salesman and the craftsman that will enhance the quality of the product and increase the quantity of its application among users of printed material of all kinds."
37. "Would it be possible for us to obtain a copy of this book for our files. Frequently we have the question arise as to whether to have a job done by photo-lithography or letterpress. A book such as yours would be invaluable in showing a client just what to expect in photo-lithography."
65. "I congratulate you on a very fine helpful piece of work. It takes its place in my business library and I expect to refer to it occasionally."
67. "It is a splendid example of effective advertising and we are very glad to have a copy on hand for reference purposes. In many respects the book is a revelation to me, containing as it does such beautiful examples of photo-lithography."
72. "I received a copy of your 'Handbook' and congratulate you on a very fine production which cannot fail to enhance the prestige of offset printing."
75. "We have been looking through the 'Handbook of Photo-Lithography' and find that the examples of photo-lithography are very fine. The 'Handbook' is not alone a work of art but it also contains very interesting information that will be of value to the user of printing."
77. "It is a very unique and excellent volume. Being an advertising man I could find much use for that volume. If there is one available, I would be delighted to have one."
91. "The 'Handbook of Photo-Lithography' was received and carefully perused. We think it is very fine and would appreciate it if you would send copy to our advertising agency."

* Originals of the letters here are on file and may be examined on request.

EDUCATED USERS

4. "I found some very helpful suggestions and feel that it will be quite a benefit in our forms of printing."
6. "It is a pleasure to receive literature of this type. While we receive a great deal of advertising literature, not all of it carries educational features about the industry represented."
13. "The writer has examined this book and has found very many interesting and educational articles in it."
18. "There is a wealth of information in this 'Handbook'. You are to be congratulated on a most excellent, helpful job. Would it be possible to obtain another copy of this issue?"
25. "We thank you and compliment you on the 'Handbook of Photo-Lithography' that came our way recently. This very attractive book has been placed in our office library for reference."
43. "It is an excellent collection of samples of the process and an interesting addition to our material on the subject."
45. "You and your organization are to be congratulated on this fine edition of the 'Handbook of Photo-Lithography' both from the commercial and education standpoint and truthfully the trade must owe much to you."
78. "Thank you for the 'Handbook of Photo-Lithography' which you were good enough to send us. It is an inestimable aid to every purchaser of photo-lithography."
82. "Let me assure you that it met with instant approval. It really is quite an aid to any member of a Production Department."
85. "I want to thank you very much for the copy of the 'Handbook of Photo-Lithography'. It indeed proved to be most interesting and I know it will be of great help in planning future jobs."
92. "I think it is a splendid edition and one that I will be very glad to have in my possession. I believe it has many interesting things and it will be a valuable reference."
113. "Pleased to receive the 'Handbook of Photo-Lithography' and have looked it over carefully; the book is nicely planned and gives examples of interesting and well done lithographing along various lines."
114. "I have found this book both interesting and instructive. It is an excellent example of the possibilities of your process, from all angles. I refer to it frequently and would appreciate receiving the next revision when published."
101. "You and your associates must take justified pride in having participated in the production of such a fine book, and the members of your industry may well be proud of the advances in the quality of their product so convincingly evidenced by the specimens contained in the book."
86. "We found your 'Handbook of Photo-Lithography' very interesting and well presented, particularly in view of the fact that you have reproduced in it one of our own creations."
127. "You should certainly be congratulated for the painstaking work that seems to have gone into your 'Handbook of Photo-

Lithography' to make it the fine job it is. I should certainly want to be remembered when your new edition is ready."

118. "I certainly appreciate receiving your 'Handbook of Photo-Lithography', as it is a beautiful piece of work and worthwhile keeping. I spent several hours studying the valuable data which it contains and find myself repeatedly looking over the beautiful illustrations. A great deal more can be said about the book, but I believe you have heard them all before."

125. "We think this book is extremely instructive and interesting, and several members of our advertising department have admired this edition and would find it of great help in their everyday association with photo-lithography."

130. "We have found the 'Handbook of Photo-Lithography' of considerable interest and an excellent source of information on this type of reproduction process."

CREATED GOODWILL

89. "I saw a copy of it a few days ago and want you to know that I think it is the most complete and precious book ever published for an industry. I don't think that any buyer should be without one of these books. I have many uses for it."
17. "I have heard so many favorable comments about your 'Handbook of Photo-Lithography' that I am writing you to ask if it would be possible for you to furnish a copy to us. We are rather extensive users of photo-lithography and any information you can send us will be very much appreciated."
22. "I have been made the editor of a publication put out by this club and we plan to use photo-lithography for our next issue. Already I have written one of the companies in your 'Handbook' for estimates. It is rather hard for me to explain to the club members what photo-lithography is but I feel that if I had this 'Handbook' they would be all for it. Also there are some swell pointers in it for me. These and other reasons make me very anxious for it."
24. "We were quite impressed with this booklet, and would therefore appreciate receiving another copy of same at your convenience."
29. "It speaks eloquently of the fine work done by yourself and your associates, and I am delighted to hear that it has brought satisfactory returns in the way of new members and increased sales."
30. "I think you have done a most excellent job and would like to extend my congratulations and best wishes for your continued success."
31. "I don't need to tell you that this is a beautiful piece of work and one which I am particularly glad to have in our files."
34. "This is one of the finest things of its kind I have ever seen, and I certainly congratulate you on the method in which it was prepared and on the remarkably fine result."
35. "It was very kind of you to send me a copy of your 'Handbook of Photo-Lithography'. This is certainly a handsome job and I think your association should be congratulated on not only its appearance, but also the manner in which the book was promoted and distributed."

WHAT BUYERS SAID

(Continued from preceding page)

70. "We congratulate you upon its unique production; we are so impressed with same that we would very much like to send a copy to our head office in London where we have a photo engraving plant."
79. "The 'Handbook of Photo-Lithography' that I received several days ago, is one of the finest I have ever seen. It is a masterpiece; and each individual number is a work of art in itself. I cannot say enough for it."
88. "We consider your 'Handbook of Photo-Lithography' to be an outstanding piece of work—not only valuable for the very interesting and informative articles contained therein but also for the excellent illustrations and its decorative qualities."
102. "Thanks very much for the copies of the 'Handbook of Photo-Lithography' in which we recognize an outstanding piece of trade association promotive literature."
116. "Many thanks for the 'Handbook of Photo-Lithography'. It is one of the finest complete examples of photo-lithography that the writer has yet seen."
119. "Your book on photo-lithography was about as fine a thing as I have ever seen. You certainly displayed to very excellent advantage the kind of work which can be done by your process."
120. "A great pleasure in examining from cover to cover."
124. "It is one of the best sales promotion handbooks that I have seen. Permit me to sincerely congratulate you on publishing such an excellent and useful book."
2. "I have been intending for several weeks to compliment you on the 'Handbook of Photo-Lithography'. It is an excellent piece of work and your organization is certainly to be complimented on its progressive activity."
3. "I found the first issue of considerable interest and wish to compliment you on the outstanding piece of work you have produced."
11. "We might say that your 'Handbook' is really a beautiful affair."
28. "Many thanks for the 'Handbook of Photo-Lithography'. I have glanced through it and it certainly is a fine job and I surely appreciate having a copy."
46. "I have just noticed the coupon in the '1935 Handbook', inviting my comments and my application for the next edition of the book. I'd rather not even cut this coupon out of the book. Please consider this letter my sincere congratulations, my gratitude, and my plea for the next edition."
53. "A very well planned book and one that should do a lot of good for your association."
50. "Many thanks for the 'Handbook'. It's a splendid promotional volume for the industry."
58. "A swell job—Enlightening."
63. "We are in receipt of the 'Handbook of Photo-Lithography' which contains some very constructive illustrations and also some valuable information."
111. "There isn't much gratitude in the average human being; because certainly I could have thanked you for the swell 'Handbook of Photo-Lithography' that came into this division a few days ago. I think it is mighty helpful."

A SALES PROMOTION DRIVE FOR YOU—

Plans are already under way for an expansion of the activity described inside this folder. The scope of the sales promotion campaign will be broadened to cover all of the worthwhile buyers of printing in the United States. Every important purchaser in your territory will be approached with the story of what lithography can do for him. It will pay you to tie in with this intensive drive.

The initial step in this extensive activity will be the production of a "BUYER'S GUIDE TO LITHOGRAPHY," which will be delivered to every worthwhile buyer of printing in the country. The "GUIDE" will be a comprehensive resume of every lithographer's sales story, covering the technical details of the process, all applications and the multitude of reasons for utilizing this process.

Every organized group of lithographers producing a specialty will be permitted to prepare for insertion in the "GUIDE" an editorial story covering the preparation and advantages of its particular product. There will be no cost for such an editorial insert.

COST

To enable you to register the name of your organization in the minds of the important buyers in your trading area, you can furnish for inclusion in the "GUIDE" a four, eight or sixteen page insert—telling your own sales story in your own way—planned and produced in your own shop. You can employ any copy treatment you desire and you can utilize any stock that suits your fancy. The cost of such an insert will be surprisingly low.

Interest in the "GUIDE" will be stimulated through the use of advertising in advertising trade papers and daily newspapers. The valuable experience acquired in conducting the New York campaign successfully will be applied to your own territory for your benefit.

WHAT TO DO

As soon as you have read through this folder and decided that you would like to participate in such a campaign for more sales, write THE PHOTO-LITHOGRAPHER, 1776 Broadway, New York, N. Y., for further details. State what sort of insert you would like to furnish.

LITHOLASTIC INKING ROLLERS

FOR PHOTO-LITHOGRAPHERS

The Vulcan Litholastic Roller has just the right body consistency for distributing and applying ink most efficiently. It aids materially in refining the ink and controlling the amount applied to the printing surface. It has just the right amount of "tack"—and does not lose this quality.

Litholastic Rollers are unaffected by oils and driers. No stickiness or swelling develops. Temperature changes have no effect on Litholastic Rollers, and they operate as well in cold as in hot, humid climates. The Litholastic covering is tough and resists abrasive wear. The rollers are free from shrinkage and swelling, maintaining an absolutely perfect diametrical measurement. Any of the common commercial washes can be used.

Considering the long life of these rollers, the price is extremely moderate. Write for particulars.

VULCAN PROOFING COMPANY

Fifty-eighth Street and First Avenue, Brooklyn, New York

Pacific Coast Representative: RALPH LEBER CO., Inc., 426 Polson Bldg., Seattle

Southern Representative: HI-SPEED ROLLER COMPANY, New Orleans

A WORD ABOUT OUR PROOFS

WHEN a planographic printer gets a good type proof, he's off to a good start. We of The Composing Room, Inc., are particularly fussy about proofs. We've got a lineup of Vandercook proof presses that would amaze you. And you ought to see the proofs they pull! So crisp, sharp and clean they almost sparkle. . . . For repros that are different . . . telephone

THE COMPOSING ROOM, INC.
Advertising Typographers
325 WEST 37TH STREET • NEW YORK CITY
Telephones MEdcillon 3-2380-2381-2382

COLOR

(Continued from Page 12)

bottle and the lighter colored wine bottled in a correspondingly colored bottle.

The effectiveness of color in the labelling and packaging of Schenley products Mr. Peters considers invaluable to merchandising. When one considers the various different blends and brands which one of the leading liquor distributors in this country must successfully get across to the public, the significant part which color plays in advertising readily appears. Each distinct blend appealing to distinct and individualized tastes must obviously be defined and distinguished from another. And here color, with its innumerable combinations and schemes, provides the stamp of individuality upon the many different brands which Schenley markets. "Each brand", Mr. Peters explained, "is stamped with its own label and its own color scheme. Without its colorful label and package our products would have little value on the shelves of the liquor dealers and would never be distinguished from other products by the purchaser."

Not only does color identify for the purchaser the Schenley product from all others, but it also aids salesmen tremendously in distributing liquor to the retailer. Accordingly, all salesmen have recently been supplied with a new sales manual which pictures in color the various products distributed by the Schenley Co. This clearly indicates to the retailer the color and external appearance of the product and obviates the necessity for salesmen carting cases filled with sample bottles to the various dealers.

Although his company had made no exhaustive statistical analysis of the relative pulling power of color against black and white it was Mr. Peters' conviction that color out-pulled black and white by 50% and possibly more.

The Schenley Co., thoroughly convinced that the returns from color more than pay for its added expenditure boldly use four colors on "more than 80% of our total advertising."

Asked to enumerate the various advantages color provides, Mr. Peters listed the following:

1. Display value.
2. Eye appeal.
3. The touch of personality.
4. The sense of prestige.

A Reliable Guide

to the best services, supplies and equipment for photo-lithographers . . . The "WHERE-TO-BUY-IT" Section which appears in this publication every issue.

U. V. ALBUMIN IS NOT A SUBSTITUTE FOR EGG ALBUMIN! IT IS A NEW AND BETTER PRODUCT

U. V. ALBUMIN is sold as a sensitized powder. It dissolves readily in water and ammonia. A fresh solution can be made up in ten minutes, yet the solution keeps for a week.

The **U. V. ALBUMIN** solution coats smoothly. When dry, the sensitized plate is slightly faster under the arc than is the conventional egg albumin sensitizer.

The **U. V. ALBUMIN** develops free and clean even under abnormal conditions of temperature and humidity. Hot weather headaches are positively eliminated.

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SATISFACTORY**

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**ELEVENTH AVENUE AND 25th STREET
NEW YORK**



Our Envelope Manufacturing Department will supply quickly and economically any style of envelope from any stock to go with mailing pieces. Samples and prices cheerfully submitted.

Copy Preparation

(continued from page 21)

The number of the run together with the effect desired would obviously be the yardstick as to your choice of toning or color retouching.

The question of which method of photo color retouching is the more economical depends upon the individual job. What is gained in the way of time in some instances by toning may be more than made up by the complicated process of masking and unmasking, remasking, etc., if the job should happen to require many different color treatments. On the other hand, simple jobs may need little or no masking and so might easily affect decided economies by toning.

In general the toning process does not depend for its popularity on its being cheaper, but on the faithfulness with which it preserves the complete photographic quality—possible by no other process except direct color photography, over which it has the advantage of much greater flexibility and control, as well as being cheaper. How long toning will remain cheaper than direct color, is, of course a question; but it seems likely to retain its marked supremacy in the matter of susceptibility of control for a long time to come, if not forever.

Same Illustrations Shown on Varied Paper Finishes

An unusual demonstration of multi-color and black and white lithography, showing tones and effects on different finishes of offset papers, has been prepared by the Maxwell Paper Company, Franklin, Warren County, Ohio.

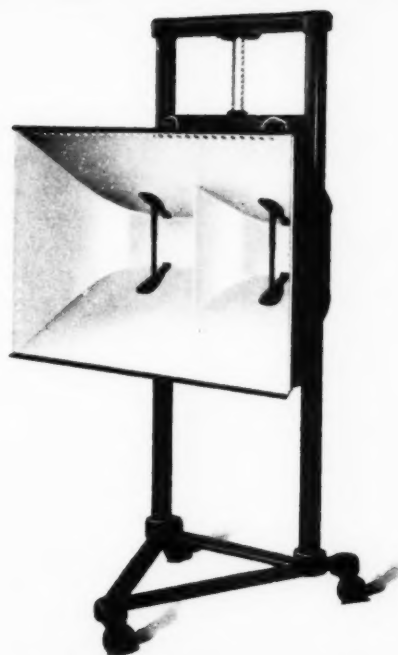
On nine consecutive pages appear the same four-color lithographic reproduction, (together with a black and white illustration) enabling the buyer to see the relative effects of the attractive wove, linen, handmade style, crash, ripple, Maxtone, corduroy, homespun and stucco finishes.

Following this presentation are a number of sample swatches of varied weight and finishes. The entire portfolio is attractively produced and spiral bound.

New Webendorfer Catalog

Specifications and illustrations of all presses manufactured by Webendorfer-Wills Co., Inc., Mount Vernon, N. Y., are contained in third revised edition of this firm's general catalog which was recently put into publication.

"The Simplified Method of Making Offset Plates" is a four-page, illustrated section preceding the general press information which takes up the remainder of the catalog. The manufacturer believes that "printers seem more concerned about the platemaking part of the offset process than in the successful operation of the press", hence the attention given to this phase of the process.



Why Are Macbeth Lamps Used In Most Plants?

①BVIOUSLY, Macbeths have something. You can, of course, bring up the highlights and shadows with any type of camera lamp. But, those elusive middle tones! That's where Macbeths shine. Result, brilliant contrasty negatives.

Illustration shows our new type B16 printing lamp, the world's best. Covers better the edges and corners of the large frames. No halation. No fuzzy edges.

You can have glass diffusers on any Macbeth lamps, if you want them.

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B O N D

A sheet with...

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- **GOOD OPACITY**
- **HIGH COLOR**



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Press Maker Delivers Talk on "The Modern Method"

By H. A. Porter

Vice-President in Charge of Sales Harris Seybold Potter Co.

THERE is so much interest in offset today—it is on the lips of practically everyone that is even slightly interested in the graphic arts—that I am referring to it now as the modern method. In one sense, this gives me great cause for happiness. Personally I believe the statement true that today offset is the modern method of business. But in another sense, it gives me cause for grave concern—for apprehension lest in its truth, other facts are forgotten and distorted.

My company manufactures presses for each of the three methods of putting ink on paper. Certainly, then we should have no cause for personal prejudices or for misunderstanding of each method. We frankly recognize that there is place for each method—that for each job some one method is best—that these printing processes are not antagonistic—that nothing precludes their use in combination—that there is no real conflict between them. If these things are true, and I have found that they are accepted by the soundest thinkers in the industry today, it is well to examine any alleged or fancied conflict that would seem to cause strife and bitterness among the advocates of either.

Over and over again, I have stressed in talks and in printed articles that the present rising tide in favor of offset has not been brought about by the ruination of any other method. The supremacy of offset for those jobs to which the process is especially adapted has not inflicted injury on any other method.

The fact that today so great emphasis is being placed upon offset is recognition of its place in the business scheme of things. This growth has been phenomenal, I freely admit; but with equal definiteness, I maintain that offset has no quarrel with letterpress printing nor yet with gravure.

Years ago, it was common practice to consider that business was strictly limited in volume so that for anyone to increase in the field, some other or others must decrease. More recently it has been recognized that markets for basic commodities have no fixed limits and that only the enterprise of those interested, the service, and the quality of the product limit their scope.

I want to go firmly on the record as saying that offset freely and gladly accords to these others their place in the sun. We should however, understand the basic truth, that for each job some one process is best adapted, and then in the true spirit of cooperation and mutual helpfulness, face the fact that industry best progresses with harmony and mutual recognition of merit. How much better is such a program of fairness and understanding among those of us in the great family of the graphic arts than an attitude of bitterness and resentment, or even of some jealousy.

Many men have pronounced this a policy of fairness. I

(continued on page 48)

THE PHOTO-LITHOGRAPHER

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GETTING VALUE**

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Square Piece

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ENVELOPES—Our completely equipped envel-
ope plant is ready to serve your most exacting
needs. May we submit quotations.

"The Modern Method"

(continued from page 46)

believe sincerely, that it is such. It is well known too, that the industry as a whole and as units, can go further with policies of fairness—of credit where credit is due—of evaluations honestly made. Business men of acumen embrace this principle wholeheartedly. There are endless examples of the truth of this. The railroads today are interested in truck, bus and air lines. A long established steam engine builder has added gas and diesel engines. A leader in the glass bottle industry is, at least considering, an expansion program to embrace metal containers. Knocking is not sound business. It is so much easier and better to accept the forward march of events than to fight against a rising tide—to give over fighting upstream against the strong current and economic urge. At best such fighting is back-breaking and ineffectual—business trends are not the superficial forces that all of us too often imagine.

It is the most natural thing in the world for printers to install offset—and why not? Do they become less printers by reason of mere adaptation of job to process best fitted? Large numbers use both methods, side by side, to the advantage of both frequently in combination, never to the detriment of either. Do printers, by adding the offset process, become lithographers? No indeed, they remain printers and merely divert that part of their work to the method specifically adapted to the process.

The world needs rebuilding today as never before in history. Opportunity exists today in unprecedented degree—opportunity for offset, and let me emphasize it, opportunity for letterpress in its own field, as offset in its own, each to meet its individual problem and each to solve its problems of cost, quality and acceptance.

Why should not this fact be clearly faced and the energies of all be directed to a common goal rather than to shortsighted attempts on the part of either to divert business from one to the other. History has all too many parallels of lost momentum due to internal misunderstandings when effort, misdirected in opposition against the rise of a leader, might to better advantage, be turned to betterment and progress alone.

Any creative program builds not by seizure—not by taking away—but by adding to the whole. The law of supply and demand governs to the same degree as before, and directed may be turned to the greater volume and accomplishment for all of us. I believe that secure advance is neither now made nor ever made by harping on shortcomings, alleged or factual. I have purposely omitted citing any advantage of any method, preferring rather to confine myself to the great fact that offset, so overwhelmingly recognized today as the modern method, bespeaks for understanding of all printing methods and attacks none, stands securely on the basic premise of the process to which the job is adapted, not the forcing of the job to a process—any process, letterpress, offset or gravure. In this program there is strength to be had—in its opposite, internal strife which can only trammel advance.

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grained correctly to suit any offset job.

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Regained to suit your requirements.

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Established 1893

Offset Papers

(continued from page 20)

no inherent tendency toward misbehavior, bends, diagonal curls and other troublesome things for the pressman to worry through with.

Get any paper maker in a corner and he will admit that he, too, has made paper that seemed perfect on the machine, but just would not lie flat after it was sheeted.

This article, of course, cannot elaborate on all the research and manufacturing necessary to bring about these improvements. It is enough to say that a mill today, if informed as to what particular humidity conditions a sheet will be used under, should be expected to deliver a good performing sheet, carrying an amount of moisture in balance with those specified conditions. This will eliminate the necessity of seasoning to prevent register troubles. When a mill does not know under just what conditions its product will be used, it can only guess what the average is. Anyone in the industry can tell you how the same sheet has performed perfectly in one plant and given trouble in another in the same city. This is due to wide variations in humidity that are present at the same time in different parts of the city, as well as the variations in the same place from hour to hour.

More recently special finished offset papers have come into prominence. These are most commonly referred to as "fancy" finished papers. They differ from the usual fancy finished stock in that the patterns used should be designed to blend in with the finished job,—not only appropriately, but so designed as to enhance the appearance of it. The sheets, of course, must look and act alike on both sides.

Special finished papers are finished in such a way that they improve register, help eliminate curling and wavy edges even under extreme conditions, and enable the paper manufacturer to deliver a product having a harder surface for ink.

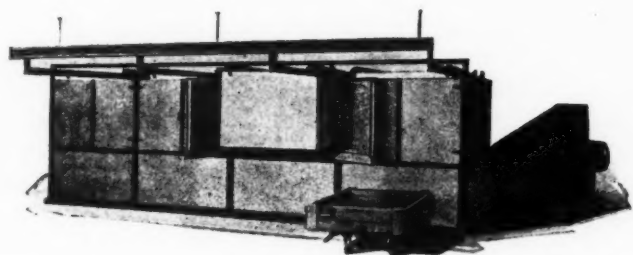
Special finished papers are not as rigid as regular wove stock. This can best be described as follows: in a sheet of wove offset the fibres are matted and formed together in a more or less solid, rigid mass. Therefore, with differences in moisture content between one part of the sheet and another, stresses and strains develop that warp the sheet, which, like any other material, if kept in this condition for any length of time, will usually be distorted permanently.

The embossing action applied to a sheet of paper in order to produce a special finished stock breaks the stiffness of the sheet. It literally separates the fibres so they can react individually. While this is being done, there is in effect a supercalendering action taking place which produces an even harder surface than the sheet had originally, with superior printing results.

One of the most outstanding advantages of a special finished sheet outside of the improved surface and press behavior is the appearance of the finished job. This has already been responsible for the quick acceptance and tremendous growth of special finished offset papers.

The Southworth Simplex ...

CONDITIONS Paper Accurately!



4 Compartment SOUTHWORTH SIMPLEX.
Capacity 60,000 sheets per 8 hours

SOUTHWORTH also manufactures Humidifiers, Universal Paper Joggers, Holdfast Hangers, Punching, Round Cornering and Perforating Machinery of all kinds. Special Machines are built to individual order.

MUCH of your work is of a specialized type that requires accurate paper conditioning. But you must have a paper conditioner that not only does the work efficiently but at a minimum of production cost. THE SOUTHWORTH SIMPLEX, made of the finest materials coupled with SOUTHWORTH high quality workmanship, offers you maximum efficiency at low upkeep cost. Write us *today* for further information, prices and list of satisfied users. THE SOUTHWORTH SIMPLEX guarantees *you* satisfaction.

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News 

On November 2, 1935, PRINTING NEWS published a list of new Offset plants in New

York City. Of the 41 names on this list—

16 bought their entire plate making equipment from the

MILES MACHINERY CO.

4 bought part of their installation from the

MILES MACHINERY CO.

11 have no plate making equipment whatsoever. Since then we have installed four other plants in New York City.

This heavy preponderance of patronage of the MILES MACHINERY COMPANY can mean only one thing.

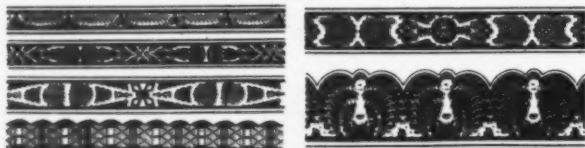
That we sell the right equipment at the right price. If you are thinking of installing offset, we can furnish you with complete plate making equipment on easy terms at prices that defy competition.

You owe it to yourself to inquire NOW!

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NINE DOLLAR SPECIAL

THE 6 BORDERS BELOW 9 INCHES LONG ON ZINC PLATE
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Now available—an unusually competent young woman, well versed in handling production in a photo-lithographic plant. Experienced in copy preparation and all details.

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Lithographers' Paper Problems Subject of Meeting

FOR more than five years a program of research in lithographic paper problems has been carried on through the cooperative efforts of the National Bureau of Standards and the Lithographic Technical Foundation. For the past two years the Foundation has been enabled to maintain a research associate at the Bureau of Standards through the generosity of interested paper manufacturers. The annual meeting of the Advisory Committee for this work was held in New York, February 17, to review the results of the past year's research and to discuss the future research program.

Up to the present time three reports have been published covering the studies made at the Bureau of Standards. These reports covered respectively the physical and mechanical causes of misregister in offset lithography, the effects of variations in humidity and temperature on the moisture content and dimensions of lithographic papers, and the relation of fiber treatment and sheet structure to register in offset lithography.

C. G. Weber, of the Bureau of Standards, made a report outlining the work done since 1930 and giving a detailed account of accomplishments during the past year. A study was named for the relation of the hygrometric condition of papers at the beginning of a multi-color job to changes in moisture content during the successive printings, and to misregister. Experimental multi-color printings were made on papers in various hygrometric conditions relative to the surrounding air and the behavior during the successive printings was determined by measuring changes in moisture content, distortion during the impression, and closeness of register obtained. It was found that papers conditioned to equilibrium with the pressroom atmosphere by the usual method expanded during the first few printings so that succeeding colors printed inside the first. However, it was found possible to maintain practically constant dimensions by two methods of conditioning. Papers conditioned first at a high relative humidity, then to equilibrium with the pressroom atmosphere by desorption gave good results. Also, papers prepared for printing by conditioning to equilibrium with a relative humidity of 5 to 8 per cent above the pressroom condition gave satisfactory register. All dimension changes during the printings were accounted for by changes in moisture content of the paper. No evidences of mechanical stretch were found.

Full Report Available

A detailed report of this work has been prepared and appeared as Bureau of Standards Research Paper No. 859, "The Treatment of Offset Papers for Optimum Register." In the February, 1936, issue of the National Bureau of Standards Journal of Research, Reprints are available from the Superintendent of Documents, Washington, D. C., at 5 cents per copy. This report is illustrated with graphs showing the influence of hygrometric condition of paper on dimensional

(continued on page 54)

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Reliability Backed by a Desire to Please

IMPORTANT ANNOUNCEMENT

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We are pleased to announce to the trade that a new Department has been added to our already large graining plant to take care of your requirements in the Regraining of your MULTILITH PLATES.

ALL OUR PLATES ARE MARBLE GRAINED
WHEN WE SAY MARBLE GRAINED WE MEAN JUST THAT

They may cost a little more BUT what a DIFFERENCE. A trial order will convince you of their merits.

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IN SHORTER TIME

- ★ SMOOTH FLOWING FOR THE RAPID BRUSH SWEEP
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- ★ NON-CRACKING

OKAY DEVELOPER

DEPENDABLE PRESS PLATES
IN A FLASH

Two ★ ★ ★ ★ numbers that have clicked in a big way — Samples cheerfully submitted at your request

- ★ EASILY APPLIED TO ANY METAL
- ★ CLEAR, SHARP AND ACID RESISTANT IMAGE
- ★ STAND UP FOR LONG PRESS LIFE
- ★ RELEASE EASILY, UNDER HIGH HUMIDITY FROM BARE GRAIN

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WAR BEING DECLARED ON LOSSES

A government survey showed printers and lithographers largest losses come from paper wrinkling-register troubles and inks not drying uniformly.

Believing the Craftsmen idea offers the best way to correct these losses by sharing your knowledge.

We are inaugurating a campaign of education showing the cause of losses and how they can be profitably corrected.

Write us today for a copy of

PROPER PAPER CONDITIONING

ADVANCE MANUFACTURING CO., INC.
LOUISVILLE, KY.

Lithographers' Paper Problems

(continued from page 52)

changes during printing and on the register obtained. Use of the sword type of paper hygroscope, patented and sold by the Lithographic Technical Foundation, in indicating the paper condition is also illustrated.

It was also reported that the Lithographic Technical Foundation has developed a practical Register Rule similar to the rule described in Bureau of Standards Research Paper No. 480, which is soon to be made available commercially. This rule is a valuable instrument for detecting sheet distortion by the printing impression and enabling its elimination before printing the first color, thereby avoiding much subsequent misregister.

Graphic Arts Techniques Told In Simple Terms

To encourage a knowledge of all graphic arts processes among paper salesmen, Eastern Manufacturing Company, New York, has prepared a 21-lesson booklet, entitled, "Talk the Printer's Language", which explains in simple, non-technical terms, the details of letterpress, lithography and gravure. The booklet was produced by photo-lithography.

Each unit of the series is punched to fit a ring binder. Atlantic Bond salesmen were supplied with one subject a

week. Three lessons were devoted to various phases of lithography, beginning with a discussion of Senefelder and the process' background. Then attention was given to plate making and several different type of presses.

This educational effort is notable not only because of the simplicity and thoroughness which are its main characteristics, but because of the fairness to all processes which is dominant.

Pity the Credit Man!

If he refuses an account, he's crazy. If he accepts it, he's easy. If he asks questions, he's suspicious. If he doesn't he's a trusting soul. If he makes you pay, he's unfeeling. If he lets it run, he's careless. If his percentage of loss is high, he's no good. If it's low, he won't take a chance. If he kicks, he's a crab. If he's alive, he doesn't know it. If he wants to increase expense, it's absolutely unnecessary. If he stays in a rut, some young hot-air artist gets his job. There are born salesmen, born buyers, but who in Kingdom Come ever heard of a born credit man?

A seasoned sales promotion man lists four ways in which copy should *not* be written: (1) by the huddle system, (2) by the copycat system, (3) by the spare-time system, (4) by the hurry system.

The sign of SUPERIOR INKS is a guarantee of satisfaction.

OUR MULTITONE OFFSET BLACK HAS THAT

POWERFUL INTENSITY PLUS CLEAN SNAPPY

RESULTS . . . A TRIAL WILL CONVINCE YOU.

"ALL THAT THE NAME IMPLIES"

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small plates as well as the Multilith

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QUALITY**

Largest in the World

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LOS ANGELES
GRAPHIC ARTS INK CO.
240 WERDIN PLACE

CREATIVE SELLING

(continued from page 22)

dryly observing: "Mr. X moves in mysterious ways his blunders to perform."

EXAMPLE THREE—*In writing advertisements:* An advertising man who was privileged to read the manuscript recalled the method advocated while engaged in writing a headline. The product was a little device to be affixed to a door to keep it open at any angle desired. The original headline read:

**DO YOU HAVE TROUBLE IN KEEPING YOUR
DOORS OPEN?**

Then install the Blank Door Check.

The advertising man substituted for this:

an open and shut proposition
THE BLANK DOOR CHECK
Holds doors open at any desired position.

This booklet, then, is definitely more than a collection of gags or wise-cracks. This original little book will afford you many moments of clean, light and stimulating diversion: *and what follows exemplifies the method of creative thinking expounded in these paragraphs.*

What was in its original state a booklet of the mildest sort of humor, something to be picked up and looked over and then discarded, became a book of reference that would be preserved. In other words, the very nature of the booklet was changed.

All this leads up to a very important and fundamental aspect of creative selling. Stated as a law, it would be: *Consider the function of the proposition you have in hand.*

The Bible puts it well in the words: "By their fruits shall ye know them."

Always, then, regard the function of what you are to produce by photo-offset lithography. If you lose sight of the function much escapes you. I have made it a habit to apply this yardstick at all times. I recall that once I was seated at the desk of a customer of mine, figuring on a job. I was set on quality, he on a low price. We considered style, form, paper, etc., all in an endeavor to bring down the price to the amount he was willing to spend. Suddenly, I stopped and asked what the proposed piece was supposed to do for him. Viewed from this angle, we both agreed he would be spending money foolishly no matter what the amount was. So I lost an order but gained his greater confidence; and I there and then resolved never to omit the function of anything from my consideration.

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LITHOGRAPHIC ABSTRACTS

Abstracts of important current articles, patents, and books, compiled by the Research Department of the Lithographic Technical Foundation, Inc. These abstracts represent statements made by the authors of articles abstracted, and do not express the opinions of the abstractors or of the Research Department. Information concerning the books or periodicals abstracted may be obtained, directly by addressing the Department of Lithographic Research, University of Cincinnati, Cincinnati, Ohio.

Negative Making

Modern Dry Plates for Screen Negatives. F. J. Tritten. *The Penrose Annual*, 38, pp. 112-4 (1936). Improvements in dry plates are described, the new, thin film emulsions showing these advantages over earlier process dry plates: (1) less halo around the dots. (2) the halo present is more easily removed by cutting, (3) rapid processing and drying, (4) intensification can be applied in the wet plate manner, e. g., by the copper-silver or lead intensification methods, and (5) the image can be printed down to metal more sharply.

Electrical Dot Etching in Photo-Lithography. J. S. Mertle. *The Penrose Annual*, 38, pp. 117-8 (1936). The electrical dot etching method patented by A. W. Cornell (U. S. Patent No. 1,892,099, issued Dec. 27, 1932) is described. A solution of potassium ferrocyanide is applied to the plate, connection is made to the negative pole of a 6-volt battery, and a platinum electrode is connected to the positive pole. When the electrode is applied to the plate, the ferricyanide is converted to ferrocyanide which reduces the dots in the immediate vicinity of the electrode. Electrodes of various shapes permit reduction over areas of any desired size. Staging is unnecessary. Speed of etching is controlled by adjusting voltage.

Type in Offset is Made Sharper by This Method. Anonymous. *Inland Printer*, 95, No. 6, Sept. 1935, pp. 67-8. (Translated from *Der Moderne Buchdrucker*, edited by the Mergenthaler Setzmachinen-Fabrik of Germany). In the "Texoprint" method of making transparencies from type matter, the metal type is sprayed with a dull black varnish, the type faces are cleaned by polishing off the varnish, and a photograph is made direct from the metal. A special camera is used, which includes means for illuminating the type from an area around the lens. Results superior to those obtained by pulling proofs are claimed. Illustrations show the special camera and enlargements of letters photographed directly from the type and also from proofs. Dr. Erich Loening is responsible for the development of the method.

Large Sizes in Photography. F. Fiala. *Reproduktion*, 6: 121-4, July, 1935. Practical hints are given on working with large sizes of wet-plate and collodion emulsion plates in—rereproduction photography. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 21, p. 367, (1935))

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Printing Plates From Stained Originals. G. Isert. *Reproduktion*, 6: 165, September, 1935. Stained prints, such as old engravings, can be reproduced in good contrast with no trace of the stains, on contrast infra-red plates through an infra-red filter. The copy is focused with a red filter. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 21, p. 367, (1935))

Method of Registering Negatives. W. Harnisch. *German Patent* No. 610,212 (Feb. 7, 1935). A transparent support, for mounting an assembly of negatives to be printed on a printing plate, is coated with a blue-dyed colloid layer in which the register marks may be inscribed, or, in multicolor work, the first color assembly may be printed on a sensitized glass plate and dyed blue to serve as a mounting plate for the other colors (*Monthly Abstract Bulletin of Eastman Kodak Company*, 21, p. 269, (1935))

The Modern Masking Method of Correct Color Reproduction. (Booklet). Published by Eastman Kodak Company, Graphic Arts Department, Rochester, New York. 36 pages. The making of correct four-color negatives by purely photomechanical means is explained in detail. Density measurements are used to control each step in the processes. A new transmission and reflection densitometer, designed especially for use in the graphic arts, is described and illustrated. The black negative is made on an infra-red sensitive plate through an infra-red filter, and is said to be far superior to one made on a panchromatic plate through a K-2 filter. A set of progressive proofs illustrating the application of the method is included.

Screen Angles. E. Klimsch, K. Schumacher, and Z. Born. *Reproduktion*, 6, No. 4, April 1935, pp. 68-71. A detailed discussion of the effect of screen angles in producing moiré patterns. Illustrations include patterns obtained in areas of uniform tint and in actual half-tone pictures, together with enlargements showing the dot arrangements which produce these patterns.

Color Photographs as Originals. M. Leeden. *Modern Lithographer and Offset Printer*, 32, No. 1, Jan. 1936, p. 1. The increasing commercial importance of color photography makes it advisable for color offset printers to keep in touch with advances in this field. The advantages of the Vivex, Finlay, and Dufaycolor processes are discussed briefly.

Process for the Production of Negatives or Positives, Particularly Separation Negatives for Color Reproduction. M. Kronschnabl. *U. S. Patent* No. 2,020,688 (Nov. 12, 1935). A process for producing color separation negatives for colored reproductions, characterized by the following steps: producing successively and through differently colored filters a plurality of different masking negatives of an original, each negative during its production being masked by the previously completed negative, exposing the light-sensitive plate in the camera

through at least two of said masking negatives in succession and exposing the plate also direct to the original.

Planographic Printing Surfaces and Plate Preparation

Photo-Rubber Lithographic Printing Plate. V. Clough. *Modern Lithographer and Offset Printer*, 32, No. 1, Jan. 1936, pp. 10, 12. A relief surface formed by placing an exposed bichromated gelatin film in an aqueous dispersion of rubber may be adapted to lithographic printing by filling in the recesses with a colloid like bichromated gum arabic, and exposing to light. A coat of lithographic ink is worked out on a plane surface, the rubber relief is laid face down on the ink layer, then the plate is "gummed", the ink washed off, and the plate is exposed to light, yielding a planographic surface formed of two materials, rubber for the ink-receptive areas and gum for the water receptive areas.

Tinting on Albumen Prints for Offset Printing. W. Baumann. *Reproduktion*, 6: 87-9, May, 1935. The best insurance against tinting after a few hundred impressions is to gum the metal immediately after graining. The developing ink should not be too greasy and should not contain lavender oil. The following sensitizer is suggested: (I) 87 grams of albumen dissolved in 800 grams of water at 30° to 40° C., by agitating continually until dissolved; 39 grams of gum arabic are added and completely dissolved in the same way. (II) 23 grams of ammonium bichromate dissolved in 600 grams of water. After thoroughly mixing (I) and (II), add 30 cubic centimeters of ammonium hydroxide, specific gravity of 0.910, and 8 cubic centimeters of 2 per cent chrome alum solution. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 21, p. 330 (1935))

Equipment and Materials

Apparatus for Cleaning Rolls. G. von Webern. U. S. Patent No. 2,027,407 (Jan. 14, 1936). A printing roll cleaning mechanism, comprising a frame, a pair of spaced rollers mounted in said frame and arranged to simultaneously support a roll to be cleaned, each of said rollers being provided with a fabric belt, said belts being looped about their respective rollers, the portion of the belts looped over the rollers supporting the roll to be cleaned, means to maintain said belts taut, means to rotate said rollers at different peripheral speeds, and means to apply a solvent to one of said belts.

Process and Apparatus for Dampening the Plate Cylinders of Lithographic and Analogous Presses. J. G. Goedike. U. S. Patents No. 2,025,045 and No. 2,025,046 (Dec. 24, 1935). Apparatus for cooling a hollow cylindrical lithographic cylinder below the dew point of the atmosphere surrounding the plate for the purpose of producing a film of moisture on the surface thereof.

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Paper and Ink

Coated and Uncoated Papers. J. Bekk. *The Penrose Annual*, 38, pp. 99-102 (1936). The results of investigations on the relative printing qualities of coated and uncoated papers for halftone work are reviewed. Coated papers are preferred to imitation art papers because the printed result is better and the ink dries faster. The absorptive power of the paper determines the speed at which printed sheets may be piled safely, and coated papers far excel imitation art papers in allowing ink penetration. The device used for testing the absorbent quality of paper is described, and the examination of papers for visible structure, the squashing of ink, and picking of paper are discussed.

Estimating the Ink Covering Power by the Specific Gravity Test. S. T. Kantor. *American Ink Maker*, 14, No. 2, Feb. 1936, pp. 19-23. The specific gravity of an ink forms a basis for estimating covering power. Methods of determining specific gravity by means of the Hubbard picnometer, the Jolly balance, and the Gruebel hydrometer are described in detail, and their relative merits are cited.

Proper Ink Reducing. G. F. Geese. *NATIONAL LITHOGRAPHER*, 43, No. 2, Feb. 1936, p. 20. Poor ink performance is caused by: (1) glazed blankets, (2) addition of powdered materials to the ink, which causes piling, (3) loose rollers or excessive moisture on the plate, and (4) the use of certain chemicals, such as chromic or tannic acid, in the water fountain.

PHOTOMECHANICAL PROGRESS

(continued from page 19)

of work—the field of journalism, that American lithography has not entered—a lesson may nevertheless be taken of the progress made in competitive industries.

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(continued from page 28)

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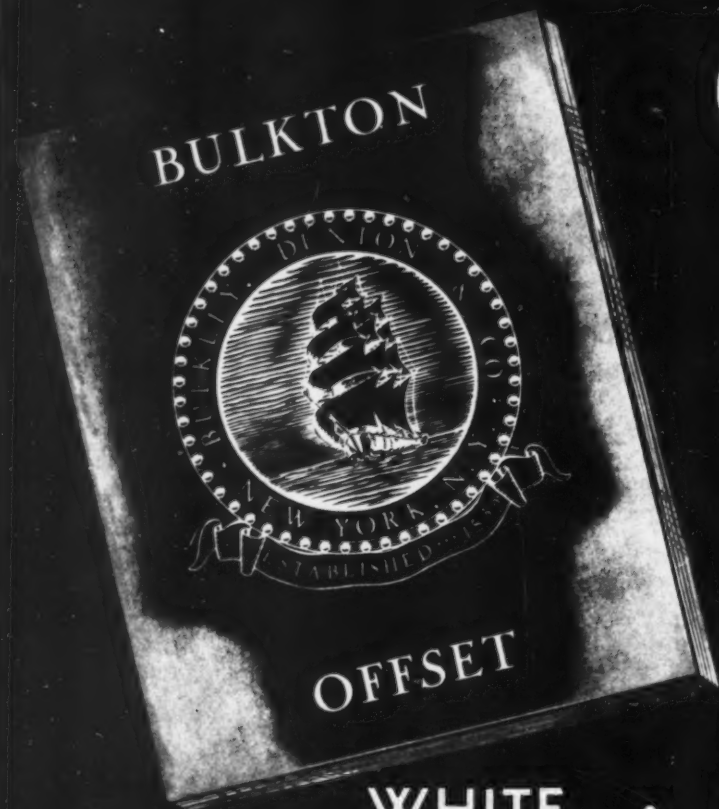
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